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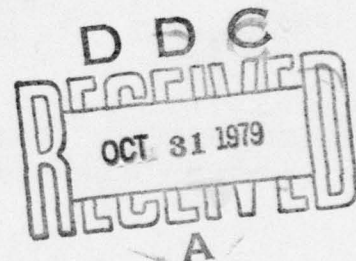
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DESIGN AND TEST OF A BORON - ALUMINUM HIGH TEMPERATURE WING

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the skins. The viability of the concept depends on whether this stabilization of the skin material can be accomplished with a practical number and spacing of substructure elements.

A weight saving of one third in comparison to the production article is projected in this boron-aluminum version of the BYM-34E wing. A major wing subcomponent was fabricated and static tested to validate the structural adequacy of the overall design.



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SUMMARY

The feasibility of utilizing the high buckling stability characteristics of boron-aluminum material in a simple, low-cost spar-rib-skin construction for a thin airfoil structure has been investigated for high temperature application up to 589 degrees K. A weight saving of 30% in comparison to the production article is projected in this boron-aluminum version of the BQM-34E wing, while increasing its temperature capability to 589 degrees K.

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INTRODUCTION

The emphasis in current Naval aircraft structural development is on reduction of weight and cost and improvement of performance. In addition, as flight speeds increase and lift augmentation and thrust vectoring are utilized in Vertical-Short Takeoff/Landing (V/STOL) aircraft, high-temperature structures may be required to withstand the effects of aerodynamic heating and hot exhaust gases. Significant achievements have been made in reducing structural weight by utilizing composite materials, i.e., boron or graphite-epoxy, for moderate-temperature applications, up to 450 degrees K. Similar improvements for higher service temperatures, up to 589 degrees K, require the use of graphite/polyimide or boron-aluminum materials.

Despite its current high cost, which is expected to be significantly reduced as usage increases, boron-aluminum has many advantages. It has higher longitudinal stiffness and strength than steel and greater room-temperature transverse and shear stiffness than titanium, while its density is less than that of aluminum. In addition, it has high bearing strength and retains the high thermal and electrical conductivity and weldability of its aluminum matrix.

The objectives of this program were to develop a high-temperature (589 degrees K) composite structural design applicable to thin lifting surfaces, and to demonstrate the concept in a primary aircraft structural component.

Normal design practice for a thin aerodynamic surface, which is being considered here, would be to use full depth honeycomb sandwich construction. However, for high temperature applications, bonding of the skins to the honeycomb core becomes a problem. It was the intent of this program, therefore, to investigate the feasibility of stabilizing the skins with discrete stiffeners at a reasonable cost and weight.

The design which was developed in this program consists of variable thickness boron-aluminum skins, to carry the primary bending and torsion loads, mechanically fastened to a light stainless steel substructure, which resists transverse shear and stabilizes the skins. The viability of the concept depends on whether this stabilization of the skin can be accomplished with a practical number and spacing of substructure elements. Fabrication cost and complexity were minimized by using simple shapes and conventional metal forming and fastening methods. The demonstration article chosen is the wing of the BQM-34E remote-piloted vehicle whose maximum thickness is only three percent of its chord, Figure 1.

Information from material and structural tests has been utilized in the evolution of the wing design. Experimentally verified material stiffness and strength properties have been incorporated into the analysis, together with buckling criteria which have been modified as a result of subcomponent development tests.

DESIGN REQUIREMENTS AND CONSIDERATIONS

The design of the B/Al version of the BQM-34E wing is based on production wing static strength, stability and flutter requirements. The critical flight load condition dictating the design, results from a 5g symmetric pull-up at R.T. An additional design requirement, a 4g symmetric pull up at 589°K, was specified for the B/Al prototype wing.

The high temperature requirement necessitated the selection of thermally compatible materials to be used in the wing design. Specifically, the coefficient of thermal expansion for the light gage metal supporting substructure had to closely match that of the B/Al skins to minimize thermal stresses at elevated temperatures. Stainless steel (TH1050) which is structurally adequate at 589°K and thermally compatible with the B/Al laminate skins was selected as a satisfactory material for the substructure. Both materials have a thermal expansion coefficient of approximately $11.0 \mu\text{m/m}^\circ\text{C}$.

Stiffness requirements dictate that the wing exhibit flutter free behavior in the flight regime ranging from Mach 1.1 at sea level to Mach 3.0 at 23600 m (60000 ft.).

B/Al WING - FINAL DESIGN OVERVIEW

WING CONFIGURATION

The profile of the B/Al version of the BQM-34E wing duplicates that of the production metal wing. A low cost design approach was followed by approximating the actual wing aerodynamic contour with a simplified wedge shape. Referring to Figure 2, all chordwise wing sections are constant depth closed out with simple wedge leading and trailing edge pieces. Spanwise, the wing tapers linearly from root to tip. Across the center wing box the skins are allowed to assume their natural pure bending curvatures.

SKINS

The basic skin configuration for the B/Al wing design, shown in Figure 3, consists of B/Al tension and compression skin pieces with tailored (0° , $\pm 45^\circ$, 90°) ply construction. Because of the B/Al laminate fabrication diffusion bonding process which involves a multi-step pressing operation, the B/Al main wing skins were kept to a manageable size by incorporating a wing center line skin splice. The joining is accomplished with a single stainless steel splice plate (2.54 mm, (.1 in.)) and a double row of mechanical blind fasteners (4.76 mm (3/16 in.)). Also, separate B/Al trailing edge pieces and stainless steel sheet leading edge pieces are spliced to the main skins along substructure spars.

Both main skins are step tapered, with gradual ply build up toward the wing centerline, optimized to satisfy critical flight load requirements. The final laminate design for the skins was arrived at through iterative stress analysis and experimental specimen and subcomponent testing. The final ply scheme for the tension and compression B/Al skins is schematically

shown in Figures 4 and 5. Skin laminate design drawings are attached at the end of the report. Both tension and compression skins are four plies (.108 cm) at the wing tip, with ply build up to 13 plies (.352 cm) and 16 plies (.168 cm) respectively, across the overall wing box. The extra plies are added to the compression skin to satisfy buckling requirements. Also, both skins are locally built up to 24 plies (.640 cm), in the area of high stress adjacent to the aft attachment of the wing.

SUBSTRUCTURE

Considering only half the wing, referring to Figure 6, the main elements of the light gage stainless steel substructure include seven spars, a tip and root rib and five wing/fuselage bolt attachment fittings. The spar and rib elements are mainly channels, with gages varying from .052 cm (.020 in.) to .127 cm (.050 in.) depending on design requirements. The spar elements run along constant percent of chord lines and are tapered linearly from wing root to tip. The five wing/fuselage attachment fittings tie the substructure elements together along the wing/fuselage bolt attachment lines. Forward spars extend from the fittings across the wing box. The flanges of the wing box spars are separate angle pieces rolled to match the curvature of the skins. The angles are internally spot welded to web sheets to form channel elements.

FASTENING

Fastening of all the structural elements is accomplished with rivets. Standard stainless steel .476 cm (3/16 in.) dia. solid rivets in conjunction with shear clips are used to fasten the substructure elements together. Fastening of the B/Al skins to the substructure is accomplished with .476 cm (3/16 in.) dia. stainless steel blind fasteners. Double rows of blind fasteners in conjunction with .476 cm (3/16 in.) stainless steel plates, as shown in Figure 7, are used to splice the upper and lower half skins together at the wing center line. Similar splice designs are used to connect leading and trailing edge pieces to the main wing skins.

ANALYSIS

NASTRAN

Stress analysis of the B/Al wing design was accomplished by constructing a finite element model, and running a series of NASTRAN static analyses, for the critical 5g maneuver load condition, optimizing the design. The tension and compression wing skins were modeled with quadrilateral and triangular plate elements which have both inplane and bending stiffness. B/Al laminate constitutive relationships used in the NASTRAN analysis were determined from basic laminate theory using the material property constants of unidirectional B/Al. The substructure spars and ribs were modeled with bar elements with shear properties built in. Because of wing symmetry only half of the wing needed to be modeled. The model configuration including grid point and element identification is shown in Figures 8 through 10.

Bulk data for the NASTRAN model is included in Appendix A. Maximum tension and compression skin limit load stresses obtained from NASTRAN for the final laminate design are shown in Figures 11 and 12 respectively.

BUCKLING ANALYSIS

The boron aluminum wing compression skin was sized to satisfy buckling requirements by using NASTRAN stresses in conjunction with standard orthotropic simply supported plate theory. Since the skins are mechanically fastened to the substructure the simply supported boundary condition is a conservative assumption. Buckling loads were calculated for the most highly stressed compression skin NASTRAN elements in each discrete skin gage region. Several iterative cycles were needed to size the skin for buckling stability. Table 1 lists the final results for the compression skin buckling analysis. The critical buckling load due to compression, N_{xcr} , and the critical buckling load due to shear loading, N_{xycr} , are compared with the loading the laminate must withstand at design ultimate, N_{xult} and N_{xyult} . Margins of safety in buckling due to combined compression and shear loading were calculated using the relation

$$M.S. = \frac{2}{R_L + \sqrt{R_L^2 + 4R_S^2}} - 1$$

where:

$$R_L = \frac{N_{xult}}{N_{xcr}}$$

$$R_S = \frac{N_{xyult}}{N_{xycr}}$$

Although the margins of safety for ultimate load were slightly negative for several of the compression skin elements, they were considered acceptable at this point since the analysis was conservative and testing was planned to assess the accuracy of the analysis method. Also, when considering design limit loading, all margins of safety would be positive.

DYNAMIC ANALYSIS

A NASTRAN real eigenvalue run was made to obtain normal mode data for the B/A1 wing design. Based on the results of this run and the fact that the B/A1 wing design is both stiffer and has less mass than the production wing, the wing was assumed to be flutter free and a rigorous flutter analysis of the B/A1 wing was not included in the design cycle.

EXPERIMENTAL TESTING

INTRODUCTION

In order to experimentally validate design procedures and establish a design criteria on which to base the final B/A1 full scale wing design, a

series of coupon specimens and two major subcomponents were fabricated and tested. The testing phase of the program included only room temperature testing. This was justified because the critical flight load condition is the R.T. 5g maneuver. To save on fabrication cost 4130 steel was substituted for the stainless, in all subcomponent substructural members.

COUPON SPECIMENS

A number of B/Al coupon specimens including tension and rail shear were tested to validate the material properties used in the design of the full-scale wing. The specimen configurations are shown in Figure 13. A summary of the coupon test results run at NADC are shown in tables 2 through 4. Results of tensile specimen tests run by Americom, Inc. on the basic B/Al laminates used in the tension and compression wing skin design are shown in Table 5. Results of these tests were satisfactory, ultimate loads and material properties in some cases were slightly lower than available standard B/Al properties.

BOX BEAM SUBCOMPONENT

Design

In order to evaluate the manufacturing processes intended for construction of the full-scale wing and to verify the buckling capability of the B/Al compression skin, a box beam specimen representative of the aft wing box region as shown in Figure 14 was designed, fabricated and tested. The aft wing box region was selected for experimental investigation because the compression skin is buckling critical in this area and a box beam type specimen presents minimum fabrication complications and can be symmetrically loaded to facilitate testing.

The box beam specimen, shown in Figure 15, which has a span of 107 cm (42 in.) and a width of 18 cm (7 in.) incorporates the same basic design features as found in the actual aft wing box. The detailed engineering drawing of the box beam is included in the foldouts. The box beam center span between the attachment bolt hole center lines, like the actual wing, is 45.7 cm. (18 in.). The center span substructure channels are constructed of 7.62 mm (.030 in.) rolled 4130 steel angles, to form constant radius flanges, spot welded to a 12.70 mm (.050 in.) 4130 web sheet. The box beam extension arm substructure channels are brake formed and follow a constant spanwise taper. The box beam incorporates eight load fittings, four representative of the aft wing/fuselage attachment fittings and four outer corner load fittings for testing. The compression skin is .267 cm, 10 ply boron/aluminum with $0^\circ \pm 45^\circ$, $0^\circ \pm 45^\circ$, 0° ply orientation. To reduce cost the tension skin is .254 cm (.1 in.) gage stainless steel since only the buckling capability of the B/Al compression skin is of interest. All box beam structural elements and skins are assembled with mechanical fasteners.

Instrumentation

The boron/aluminum wing box beam specimen was instrumented with axial strain gages and strain rosettes as diagrammed in Figure 16. The gages were positioned to monitor spanwise bending and shear stress distribution in both tension and compression skins, stress concentration around the bolt holes and initiation of buckling in the compression skin.

Loading

The box beam was loaded at the eight load fitting bolt holes to produce a condition of pure bending in the center section. This condition with total ultimate applied load of 38.6 kN approximates the critical 5g maneuver load condition. The box beam test set up is shown in Figure 17.

Test

After several initial load cycles to 30% D.L.L to exercise the specimen a run to failure was made. Buckling of the B/Al compression skin initiated at a load of 288.0 kN comparing well with analysis based on simply supported orthotropic plate theory which predicted initiation of buckling at a load of 314.1 kN. The early onset of buckling may be attributed to actual B/Al compression skin material properties being somewhat lower than those used in the analysis. The specimen continued to sustain increased loading after onset of buckling up to 612.9 kN, at which catastrophic failure occurred. The failure is shown in Figure 18. The results of this test were used to substantiate the full-scale compression wing skin design for buckling stability.

WING SUBCOMPONENT

Design

In order to evaluate the behavior of the wing design in the area of highest tensile and compressive stresses, which is adjacent to the aft wing-to-fuselage attachment location, a second development test specimen was designed, fabricated, and tested. This was a subcomponent, outlined in Figure 19, which contained significant design details of the actual wing, with some minor alterations to simplify its fabrication and to provide test load application.

The tension and compression B/Al skins maintain constant ply thickness of 13 and 16 plies respectively over the entire subcomponent surface area. The ply orientation scheme of the skins is identical to that of the full-scale wing's center section. The boron-aluminum skins were fabricated by Amercom, Inc., including the countersunk holes which were made by electric discharge machining, Figure 20.

The substructure parts shown in Figure 21 which stabilize the skins at a constant depth of 4.10 cm were made and assembly operations performed at NAVAIRDEVCON. At the subcomponent root end the wing center section skin splices are accurately represented by double row rivet attachment to .476 cm (3/16 in.) steel splice plates. These splice plates are supported

by a solid aluminum spacer bar which allows the complete assembly to be clamped for a cantilever test load set up. At the subcomponent free end, a 2.54 cm (1.0 in.) Al plate is fixed for test load application. The complete subcomponent assembly is pictured in Figure 22. The detail design drawings for the subcomponent are attached in the foldouts.

Test Loading and Instrumentation

Test loads to be applied to the B/Al wing subcomponent were determined with the aid of a NASTRAN loads analysis. This analysis resulted in a set of test loads which when applied to the subcomponent produced a stress field in the B/Al skins similar to the stress field present in the actual full scale wing skins when subjected to the 5g maneuver load condition.

The test set up shown in Figure 23 consists of the subcomponent mounted to a strongback testing facility; loads were applied to the specimen through two independent sets of wiffle trees by manually operated hydraulic jacks.

The subcomponent was instrumented with 73 strain gages and three deflection transducers. The gages monitor critically stressed regions on both tension and compression skins and are also paired internally and externally on the compression skin to check for initiation of buckling as shown in Figures 24 through 26.

The test load procedure was as follows:

1. Apply 30% D.L.L., 10% increments, check strain and deflection data.
2. Apply 50% D.L.L., 10% increments, check strain and deflection data, re-apply 50% D.L.L., 2 cycles.
3. Apply 100% D.L.L., 10% increments, check strain and deflection data, re-apply 100% D.L.L., 4 cycles.

Test Results

After initial loading to 30% D.L.L. strain and deflection data was plotted. Referring to Figures 27 and 28, typical strain and deflection vs. load plots from the test data reveal nonlinear, inelastic behavior exhibited by the B/Al skins. The second applied load cycle to 50% D.L.L. yielded approximately linear elastic response in the skins up to the previously applied load level (30% D.L.L.). Subsequent loading above the 30% D.L.L. level resulted in a continuation of the nonlinear inelastic behavior in the skins. Additional load cycles to the 50% D.L.L. level yielded repeatable linear elastic response in the skins.

The initial run to 100% D.L.L. resulted in a failure at the 70% D.L.L. level. Again nonlinear inelastic behavior was exhibited by the skins once the previously high loading point was exceeded (50% D.L.L.). The failure occurred in the tension skin, a crack initiating at the corner radius, just outboard of the aft bolt hole, and propagating across the skin following a

path of minimum net section (see Figure 29).

This failure can be attributed to stress concentrations present at the corner radius which are amplified by the close proximity of a fastener. Strain levels monitored on both tension and compression skins at time of failure were similar to those predicted by analysis except in the local failure area. In addition, the load-strain and load-strain and load-deflection behavior of the specimen was highly non-linear, and large permanent deformations were present after testing at various load levels under the failure load.

Stress strain behavior of a tensile coupon cut from the same laminate as the B/Al subcomponent tensile skin is shown in Figure 30. Stress/strain data for the 6061 Al matrix is also plotted. The early onset of plasticity in the Al matrix appears to have a significant influence on the overall stress/strain response of the B/Al composite when subjected to loading. The B/Al laminate begins exhibiting inelastic behavior at approximately the same strain level that the 6061 Al becomes plastic.

FINAL WING DESIGN CRITERIA

Based on the results of this test, a review of stress-strain behavior of tensile specimens and some limited data on stress concentration in drilled holes, the following criteria was formulated for final design of the wing skins:

Nominal limit load stress \leq 360 MPa

Strains at limit load \leq 2000 μ m/m

Stress concentration factor = 1.5

It was the above design criteria which dictated the need for additional B/Al ply build up to 24 plies, in the aft attachment region, on both tension and compression wing skins to relieve stress concentrations due to attachment holes.

Final analysis using the NASTRAN finite element program was performed to confirm the stress and strain levels in the wing. The estimated total weight is 52.8 kg, 30 percent less than that of the production wing, which was designed for only 422 degrees K. Of the total weight, the skins comprise 26.3 kg, or 50 percent. The leading edge, substructure, centerline splice, and rivets and fittings weigh 5.9, 28.3, 3.2 and 4.5 kg respectively.

CONCLUSIONS

In this program, a design has been developed using metal-matrix composites to achieve high temperature capability and reduced weight. Much has been learned about the behavior of boron-aluminum and criteria for its use in aircraft structures. Additional development work would be required before it could be incorporated into an actual system. In particular, more data is

needed on fatigue and on stress concentrations in loaded holes both at low and high temperatures; basic fracture characterization should be performed; laminate tailoring should be investigated to minimize these effects as well as those due to the non-linear behavior and permanent deformations.

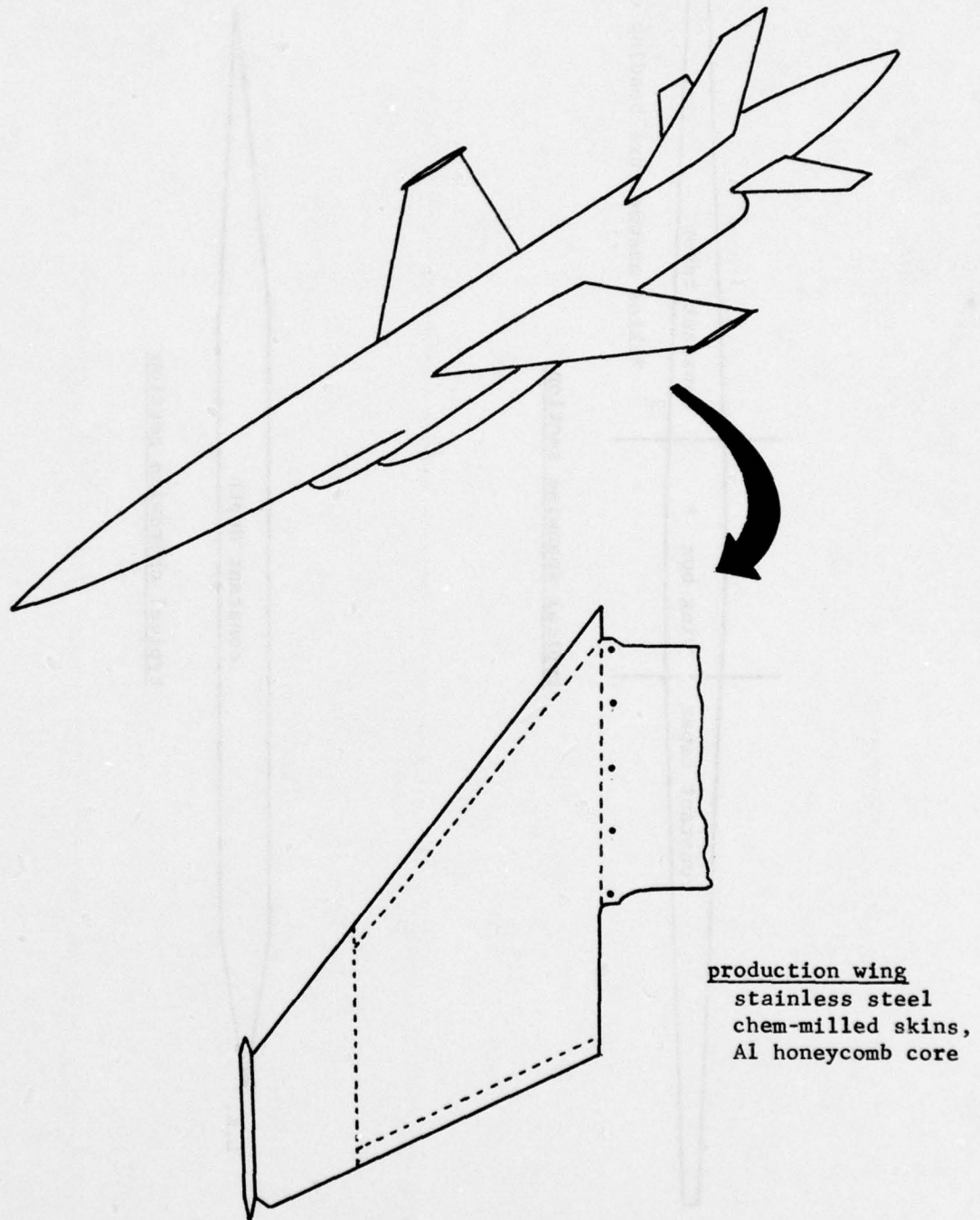
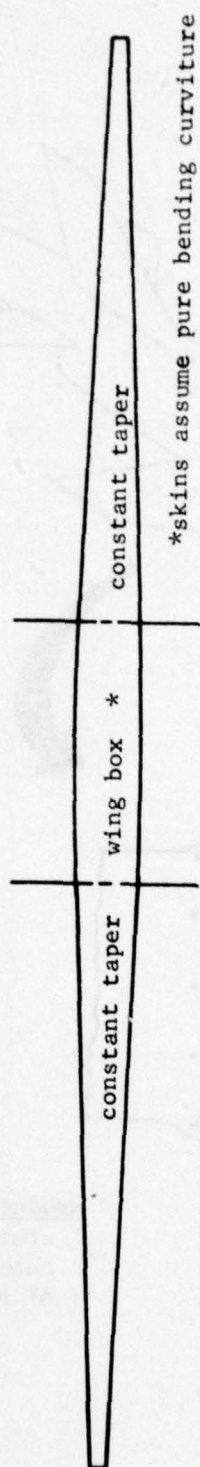
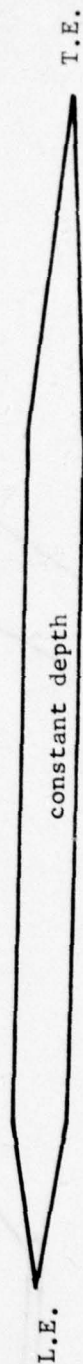


FIGURE 1 - BQM-34E RPV



typical spanwise section



typical chordwise section

FIGURE 2 - B/AI WING SECTION GEOMETRY

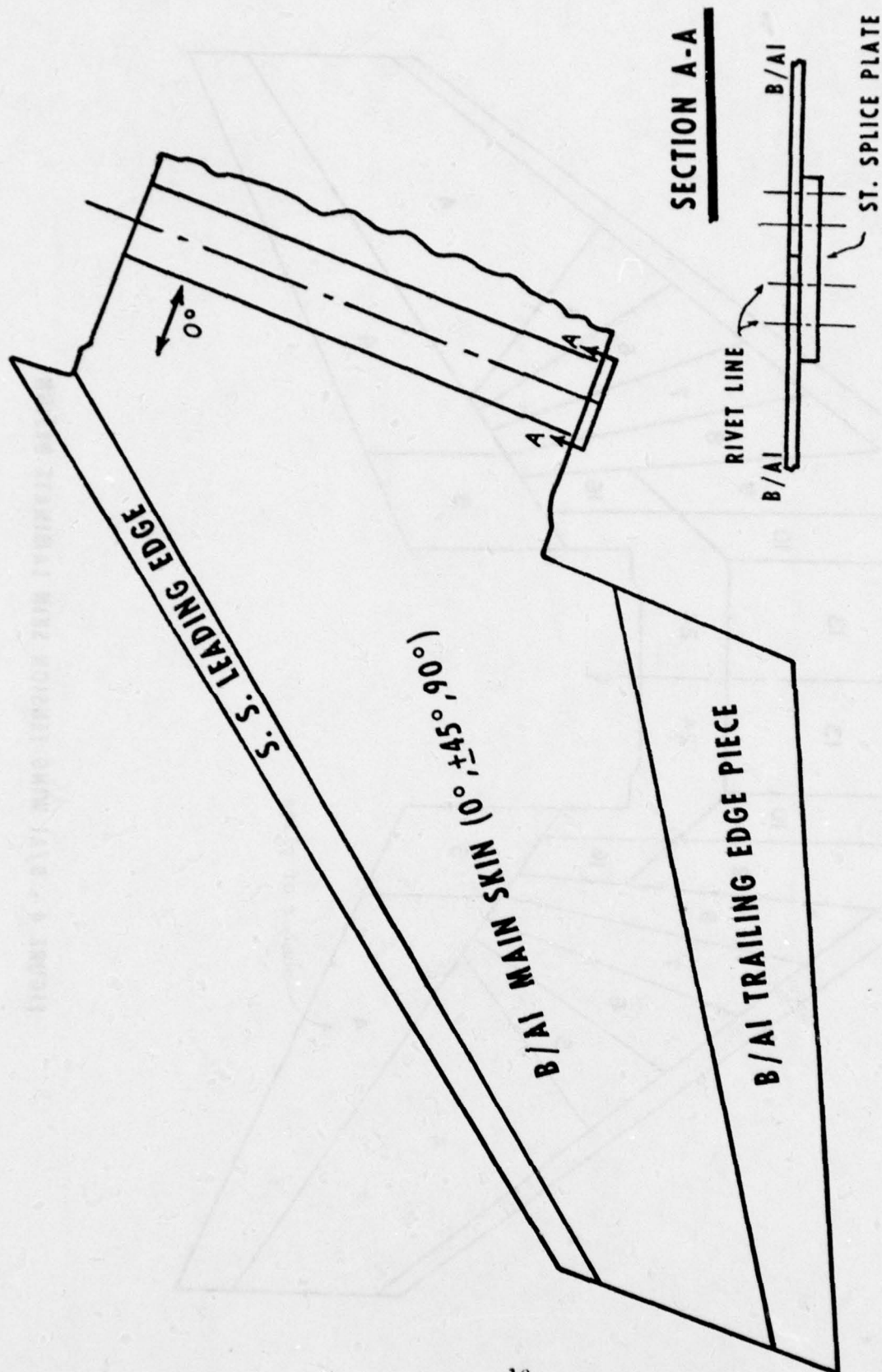


FIGURE 3 - B/AI WING BASIC SKIN CONFIGURATION

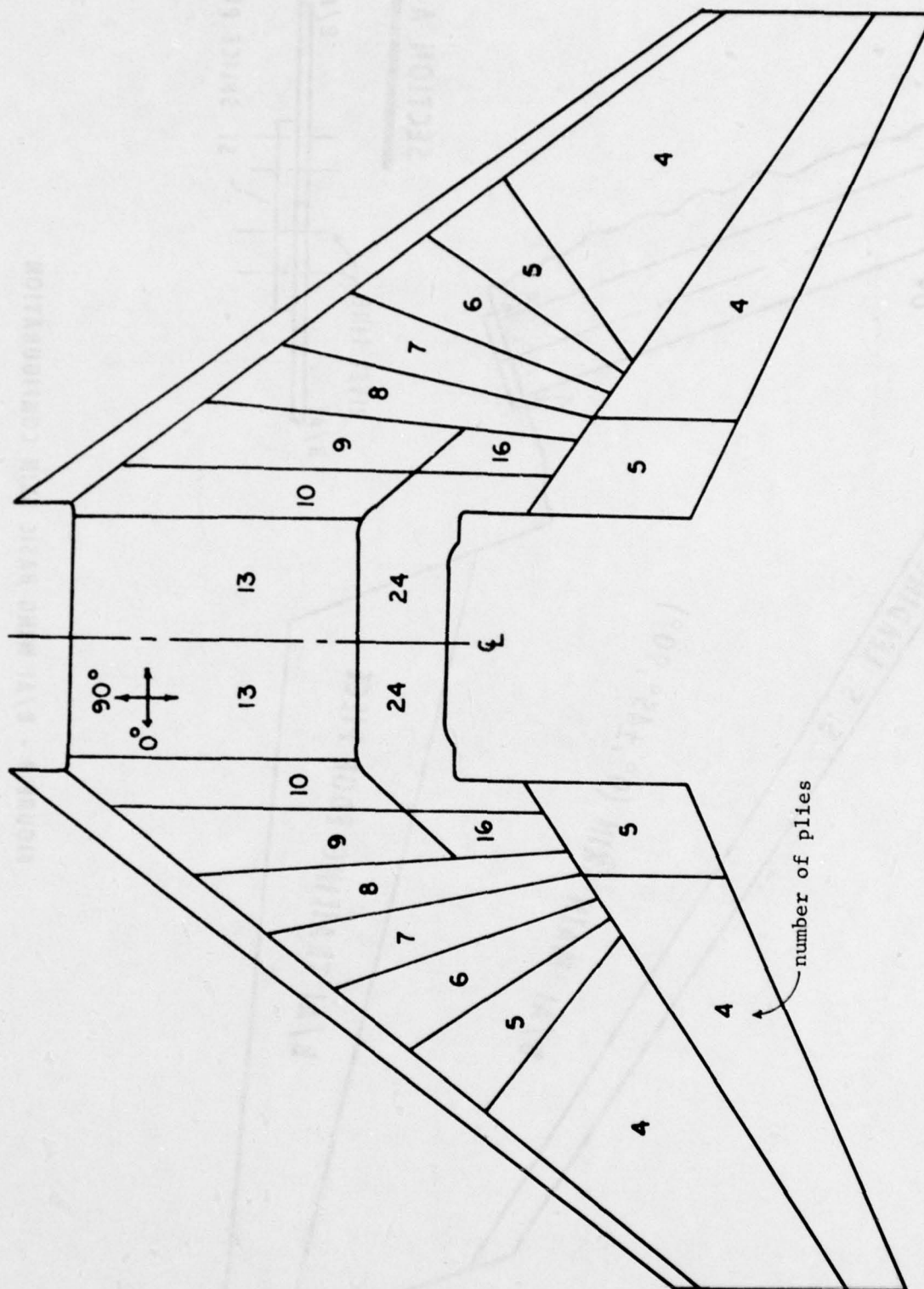


FIGURE 4 - B/AI WING TENSION SKIN LAMINATE DESIGN

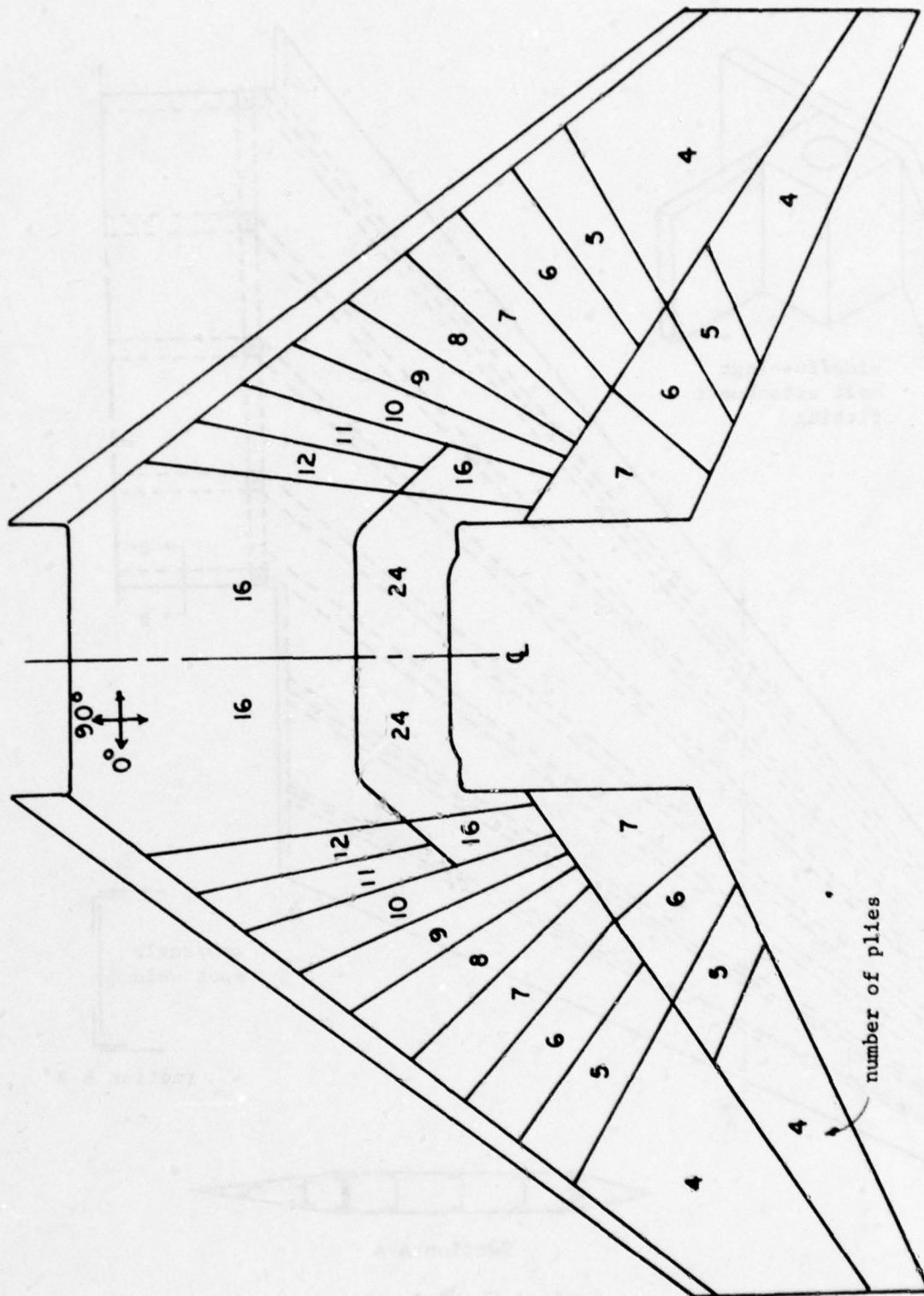


FIGURE 5 - B/AI WING COMPRESSION SKIN LAMINATE DESIGN

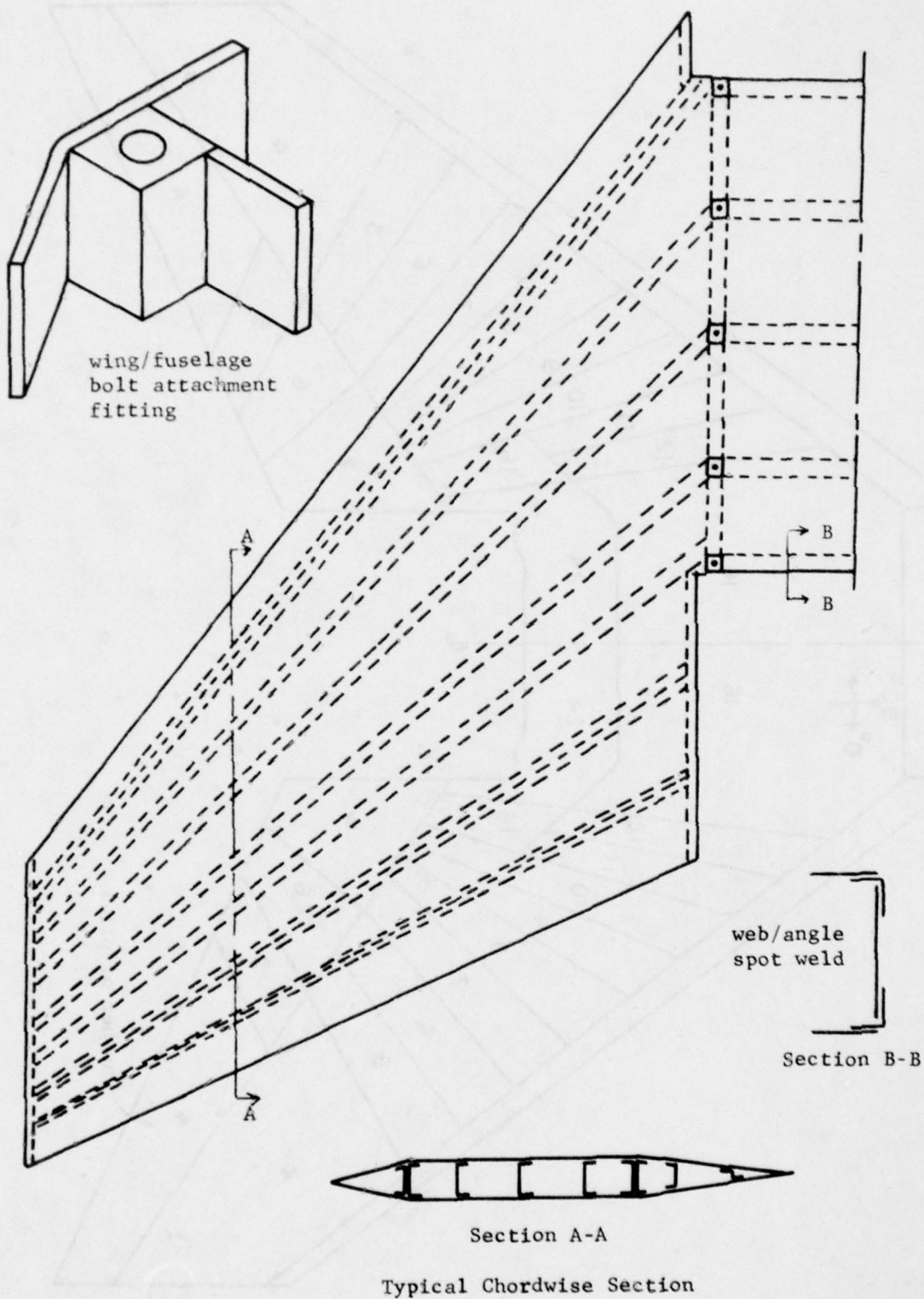


FIGURE 6 - B/AI WING SUBSTRUCTURE

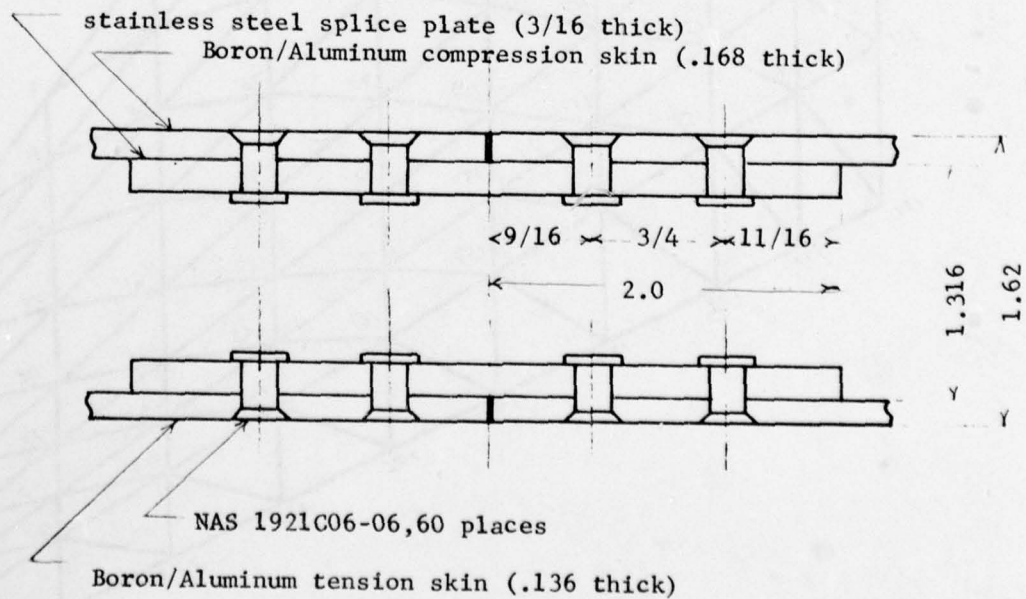
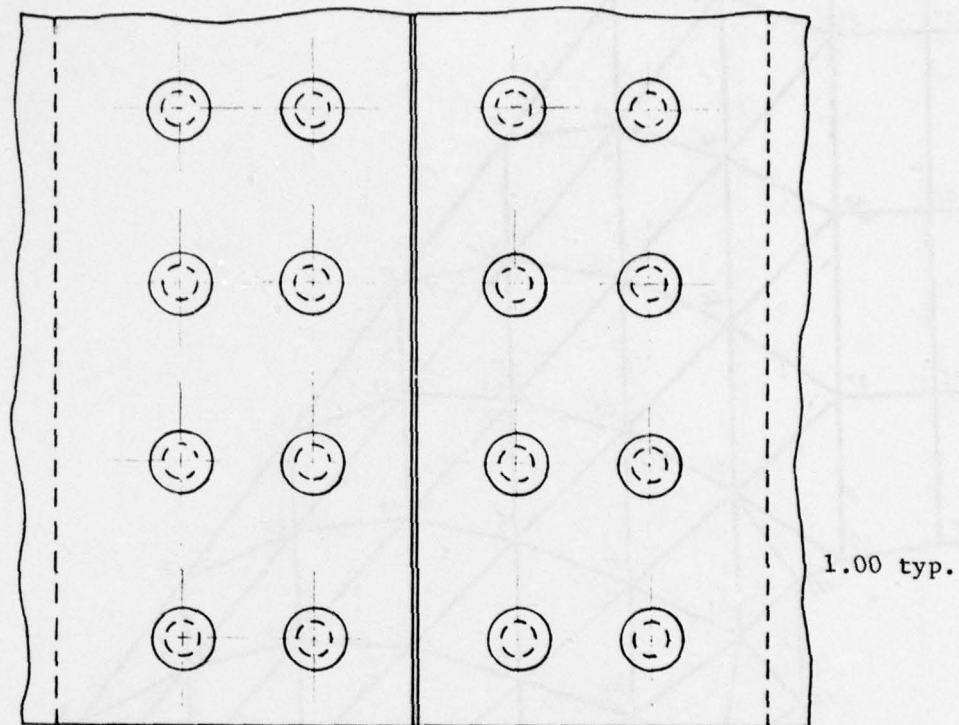


FIGURE 7 - WING SKIN CENTERLINE SPLICE

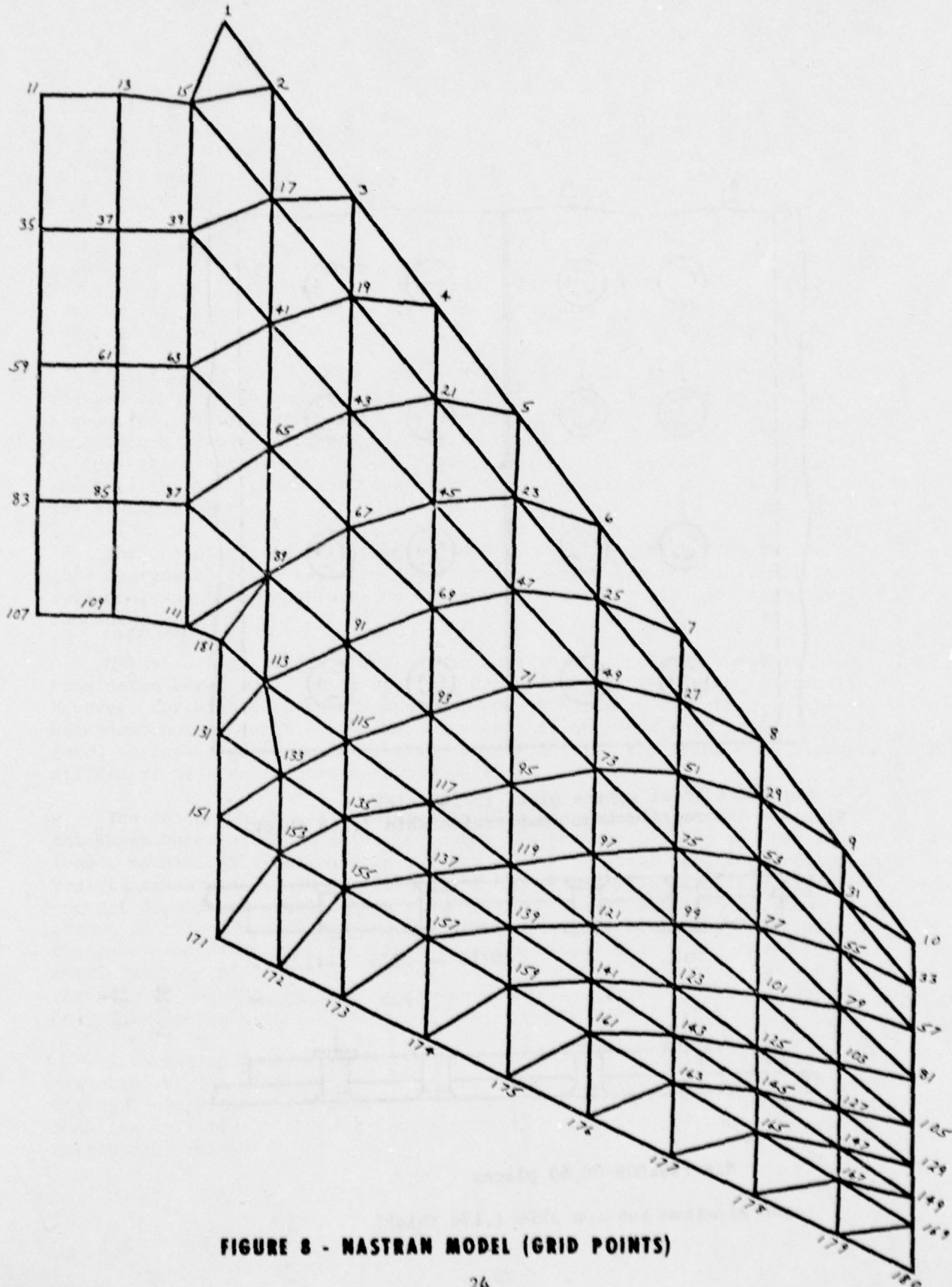
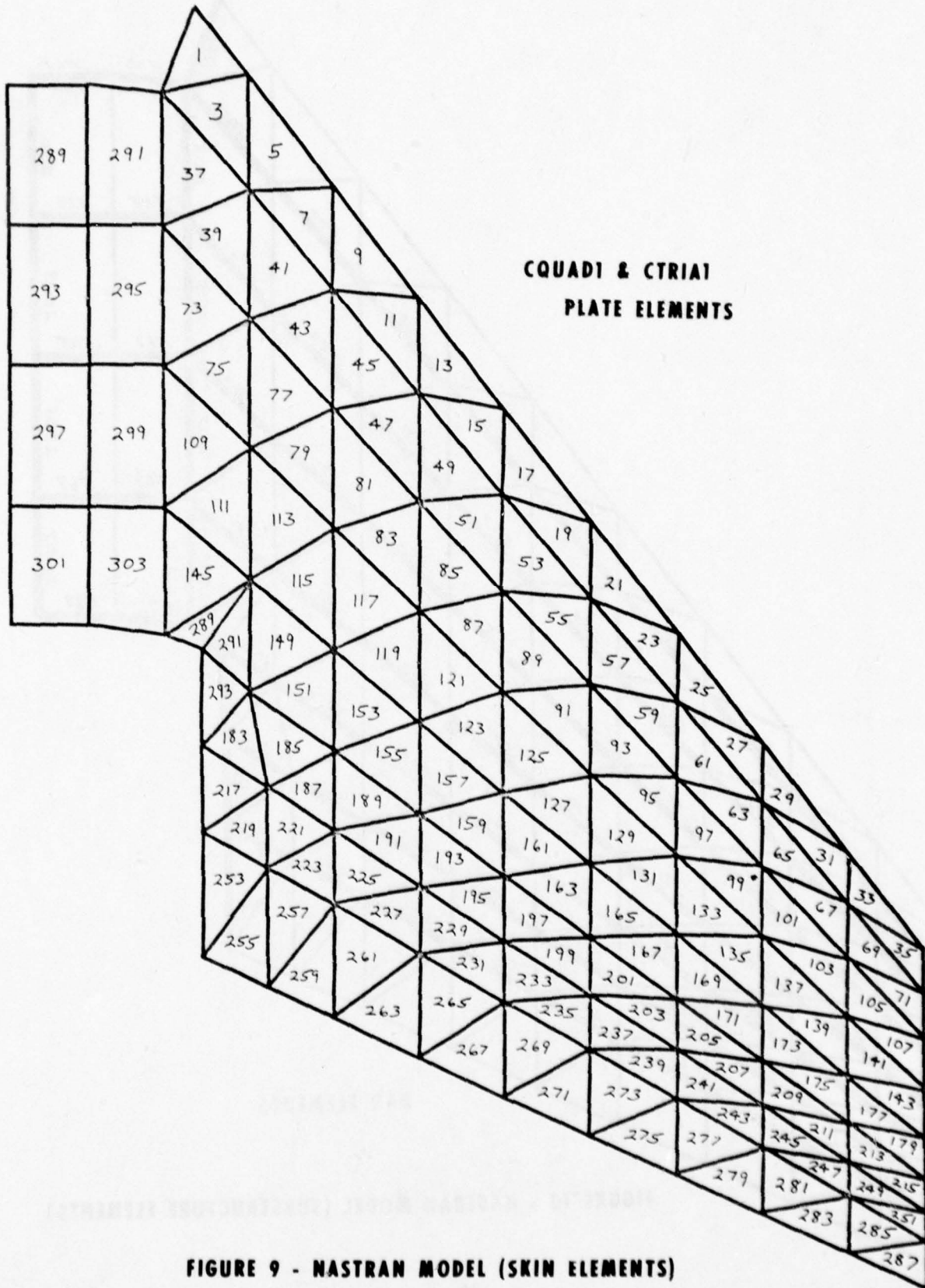
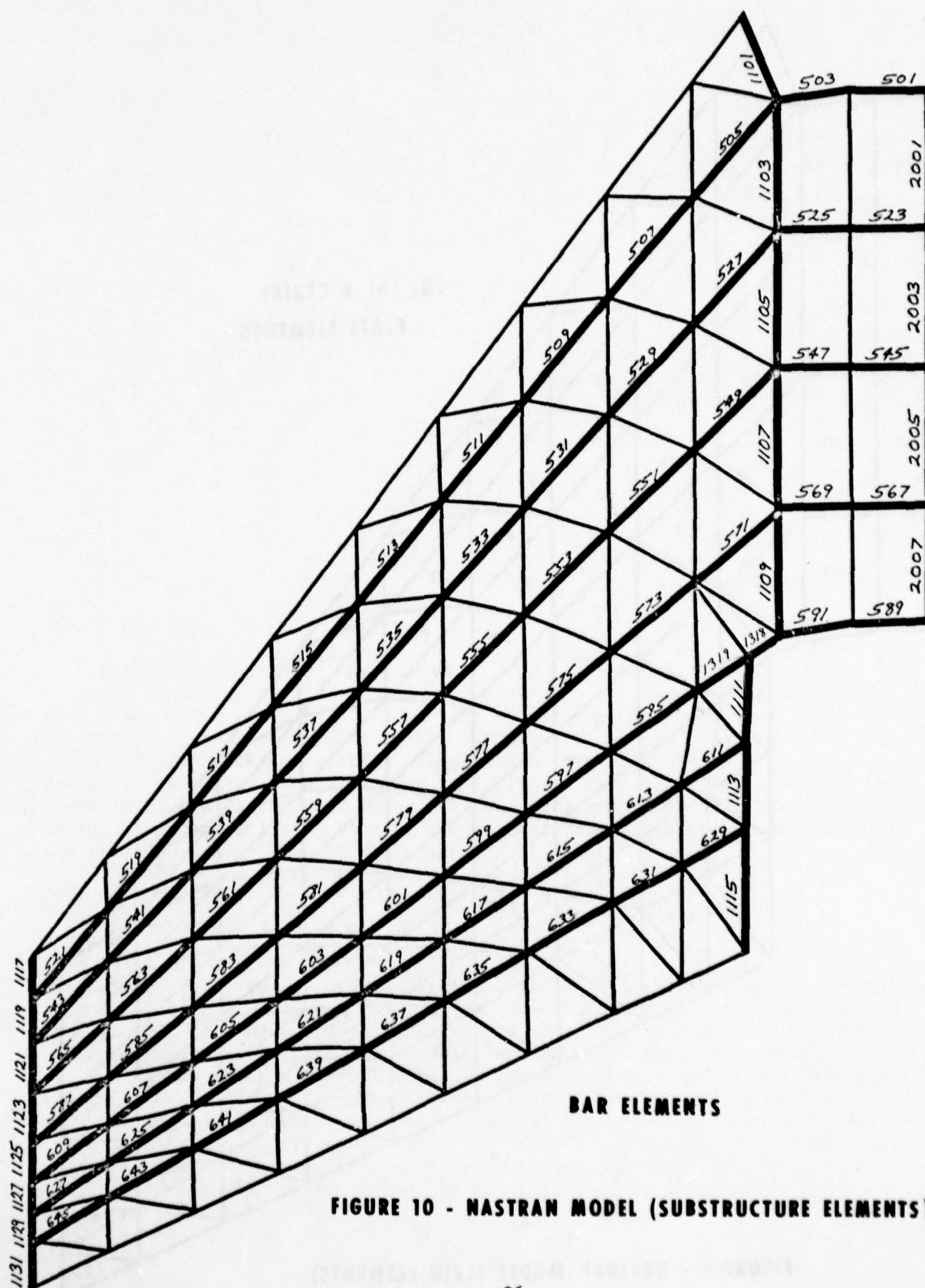


FIGURE 8 - NASTRAN MODEL (GRID POINTS)





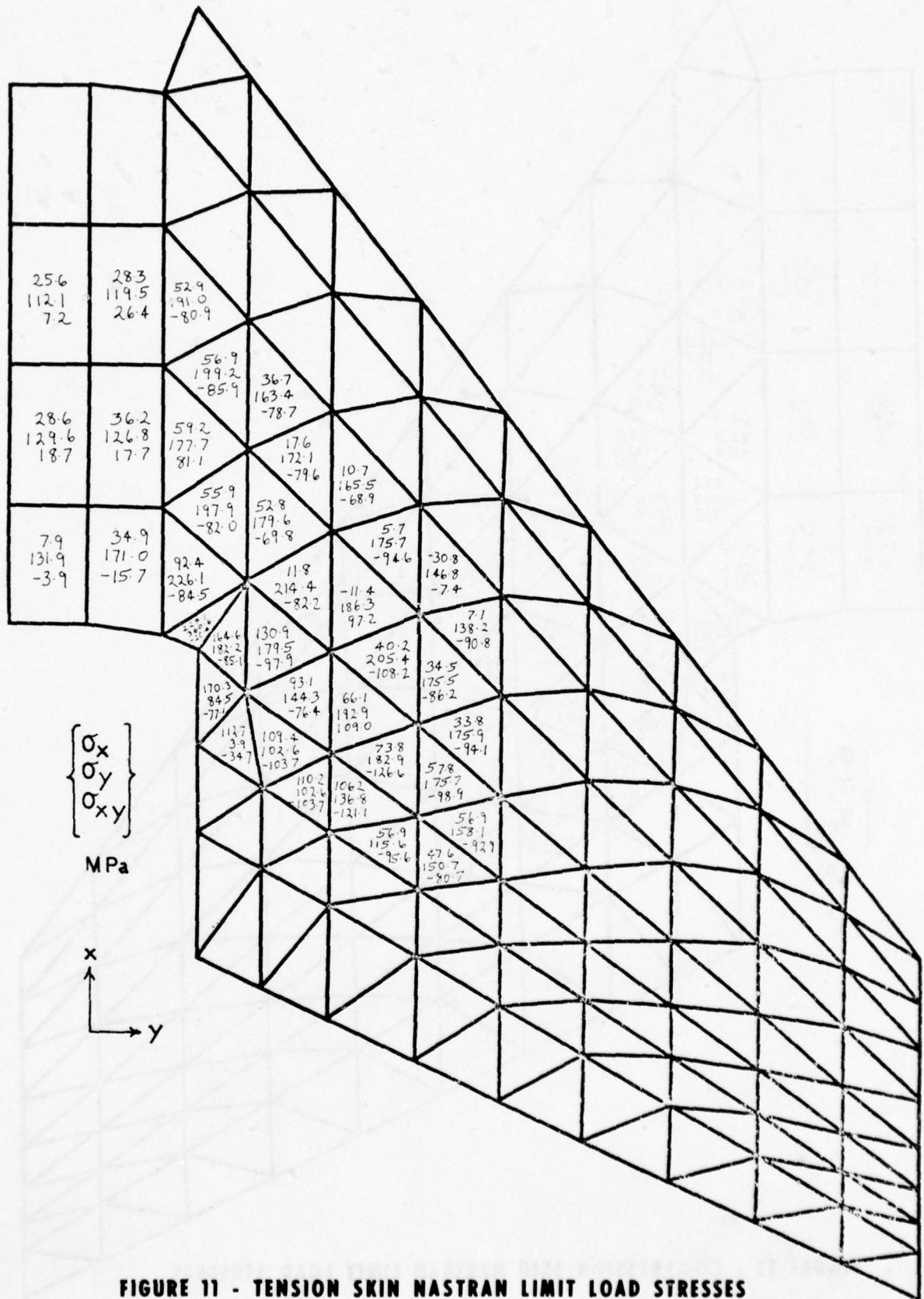


FIGURE 11 - TENSION SKIN NASTRAN LIMIT LOAD STRESSES

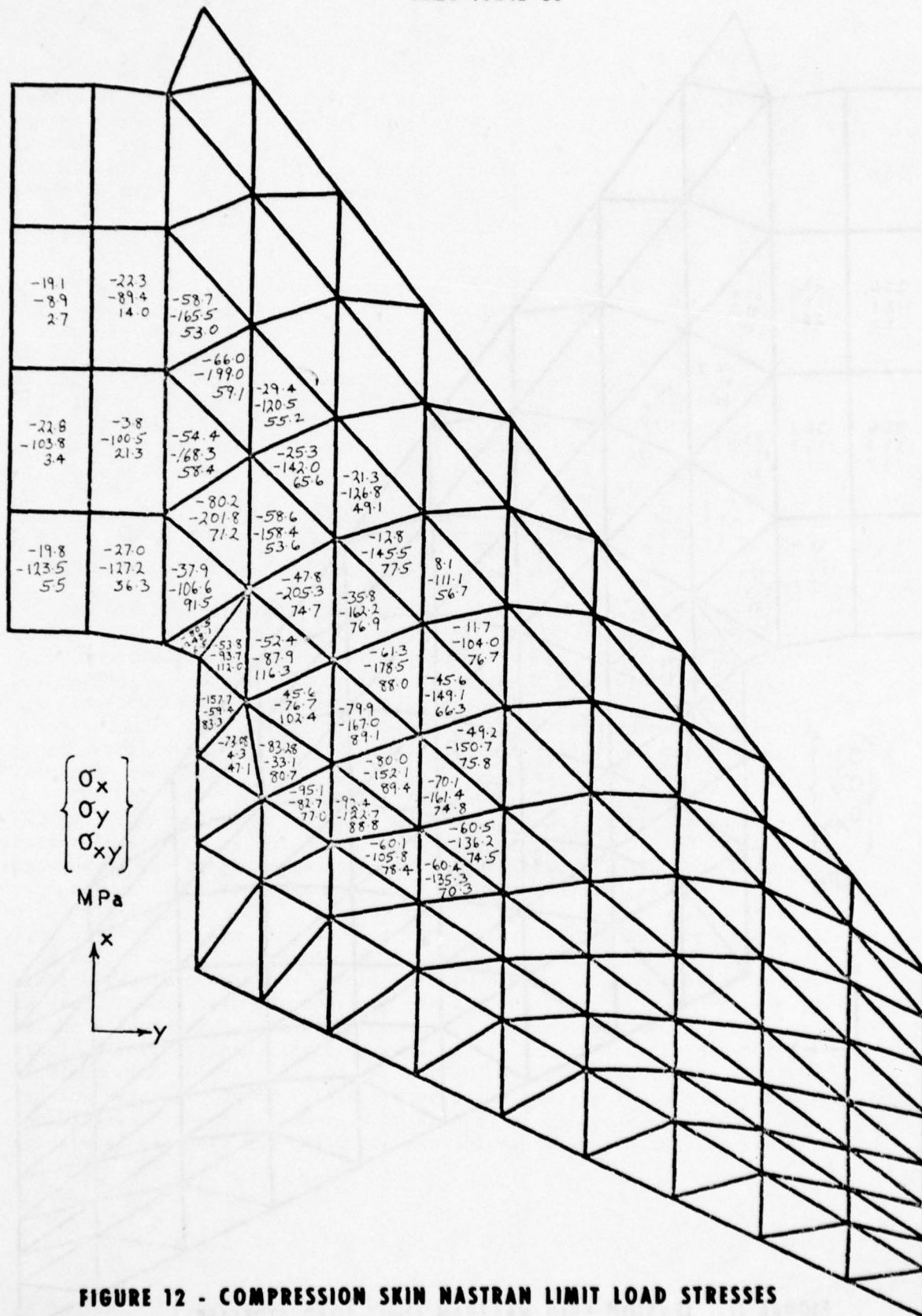


FIGURE 12 - COMPRESSION SKIN NASTRAN LIMIT LOAD STRESSES

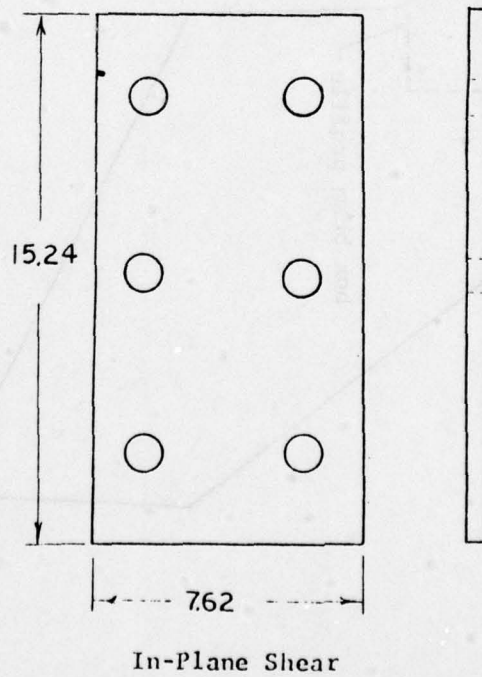
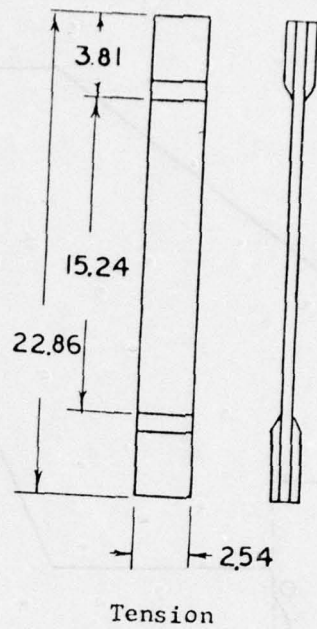


FIGURE 13 - MATERIAL COUPON SPECIMENS

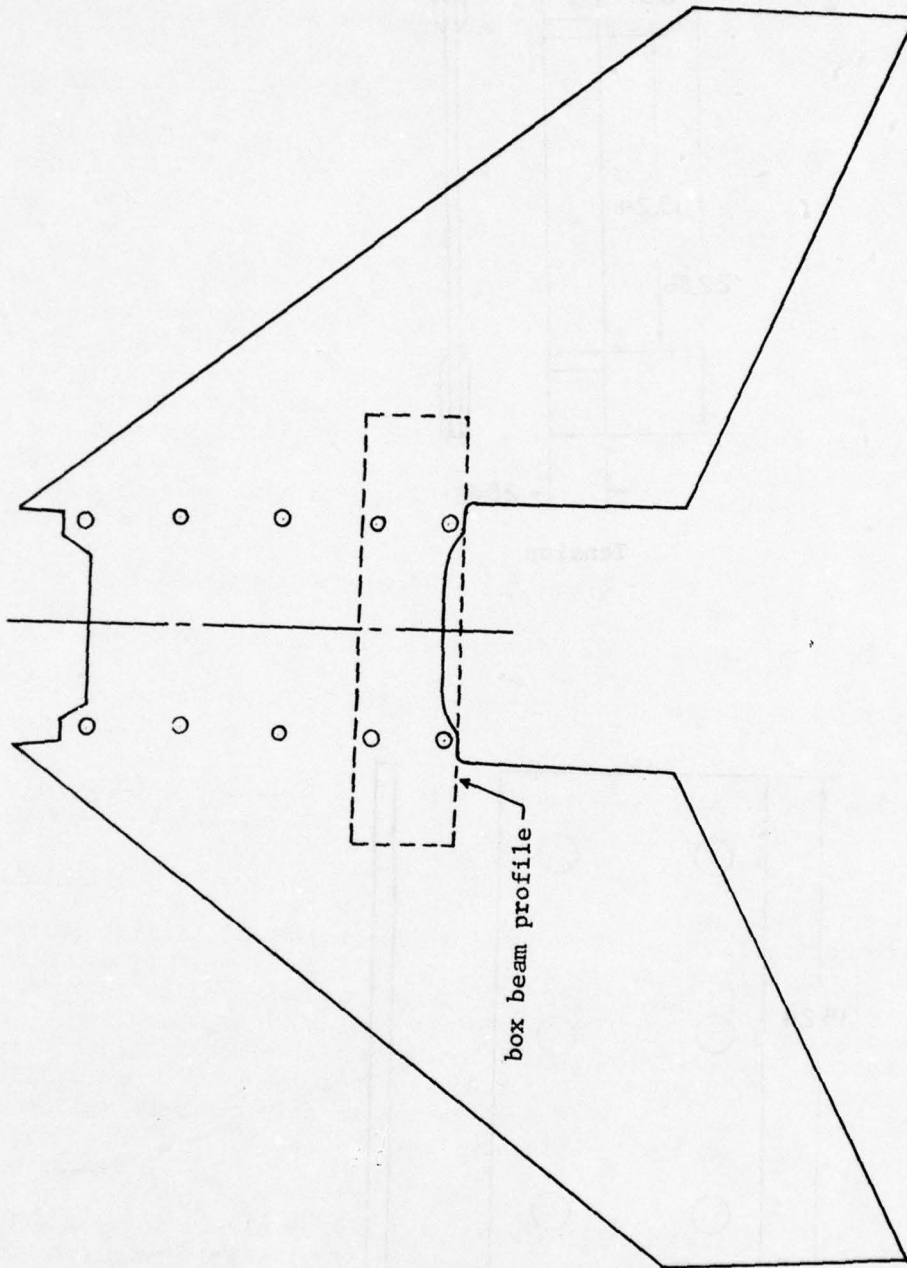


FIGURE 14 - BOX BEAM SUBCOMPONENT PROFILE

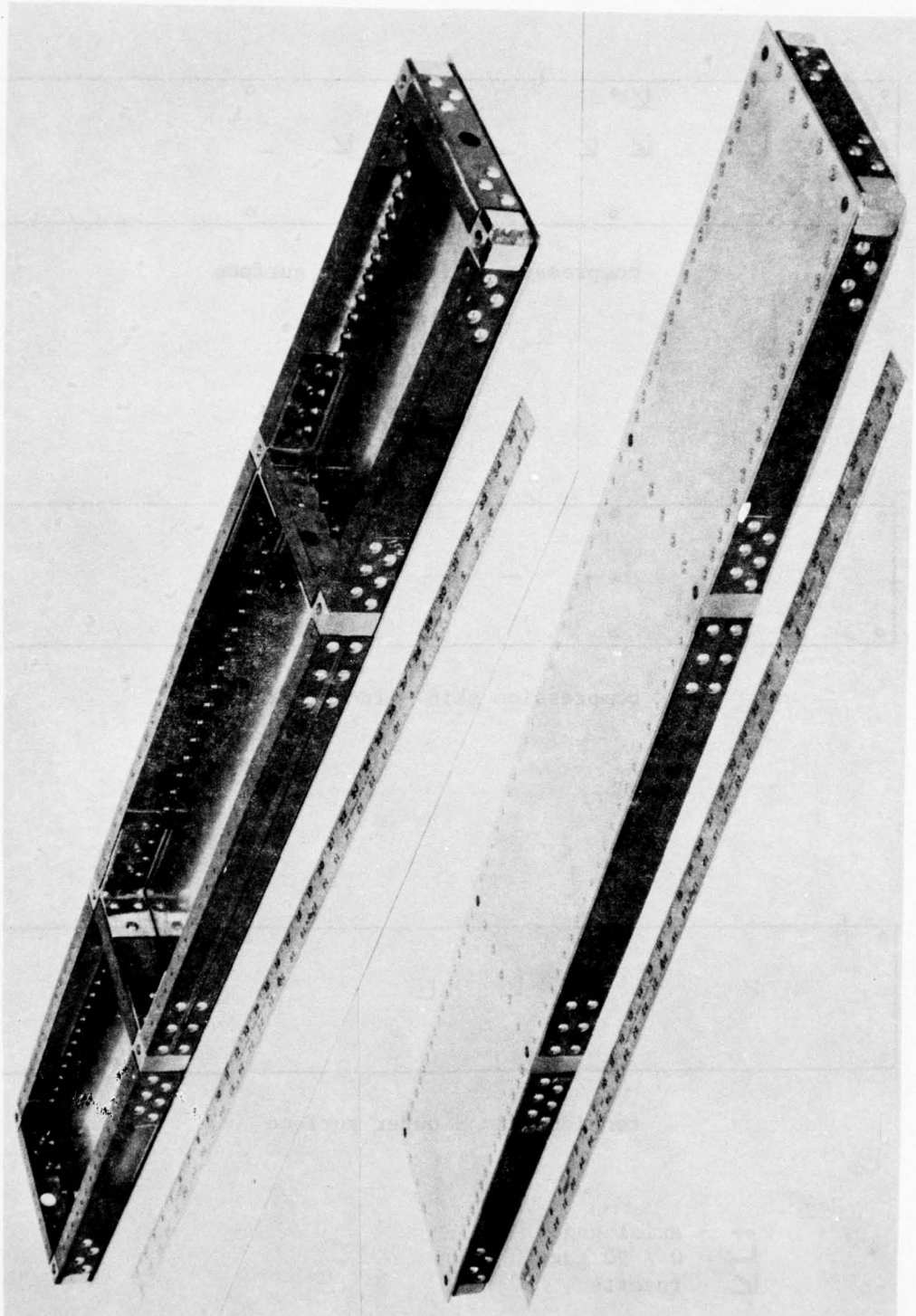
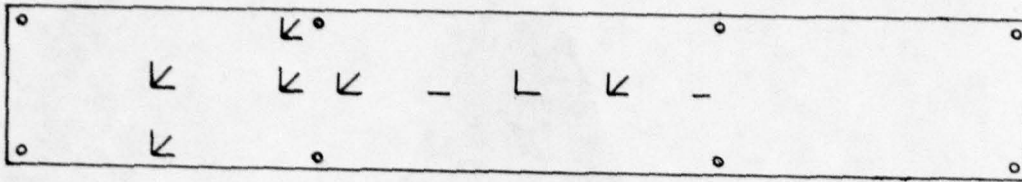
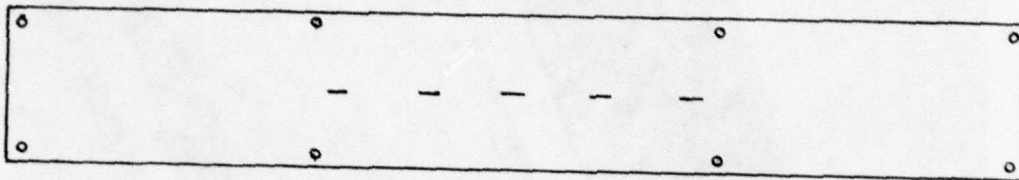


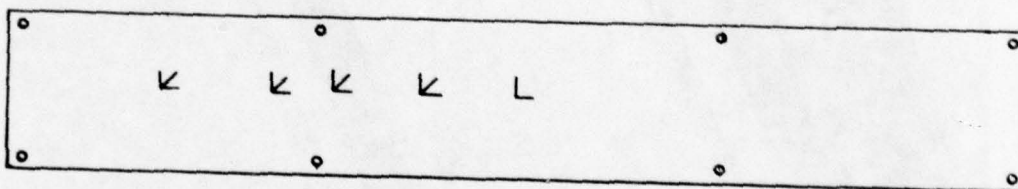
FIGURE 15 - BOX BEAM SUBCOMPONENT ASSEMBLY



compression skin - outer surface



compression skin - inner surface



tension skin - outer surface

Key




-  - axial gage
-  - 0 / 90 gage
-  - rosette

Figure 16 - Box Beam Subcomponent Instrumentation

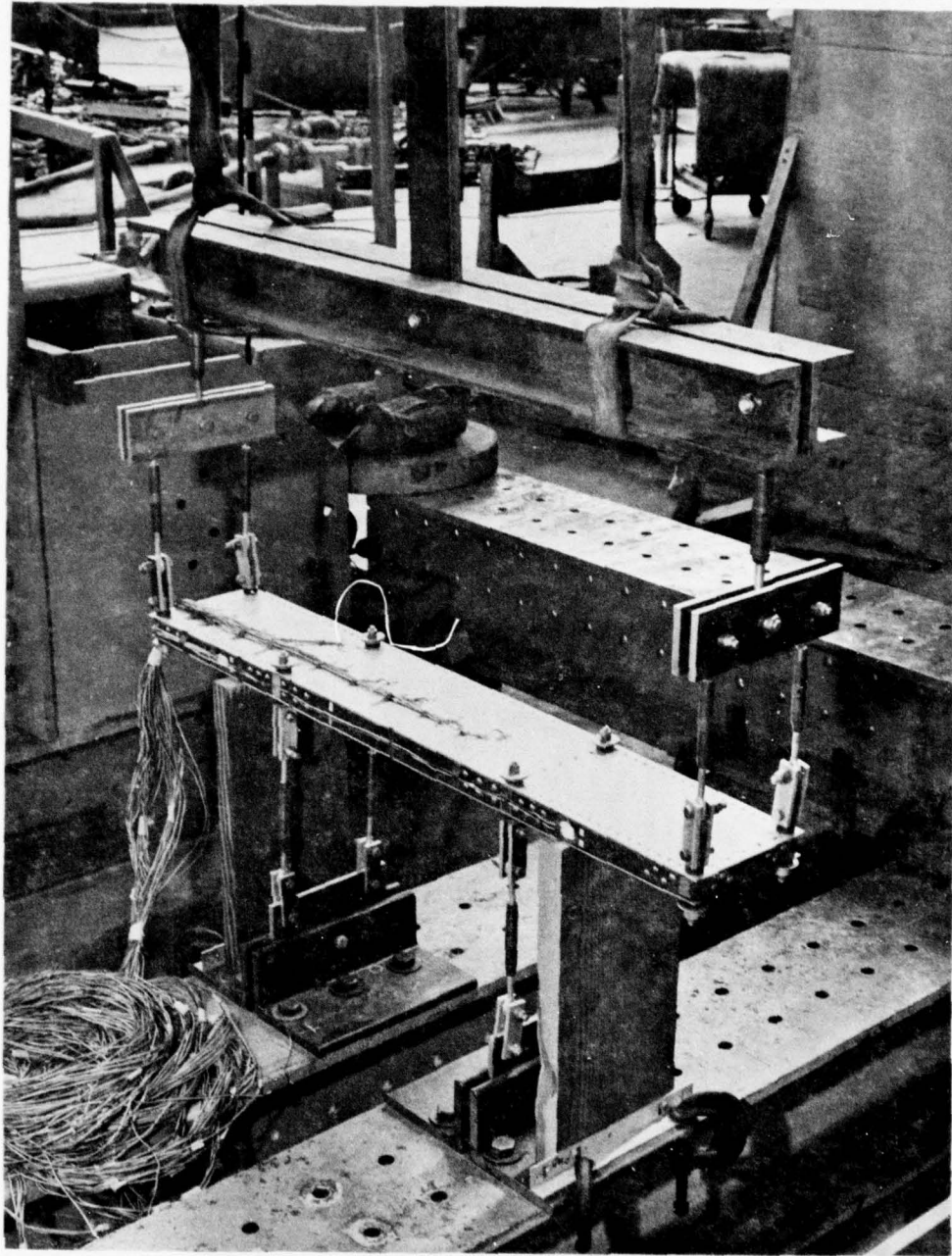


FIGURE 17 - BOX BEAM SUBCOMPONENT TEST SETUP

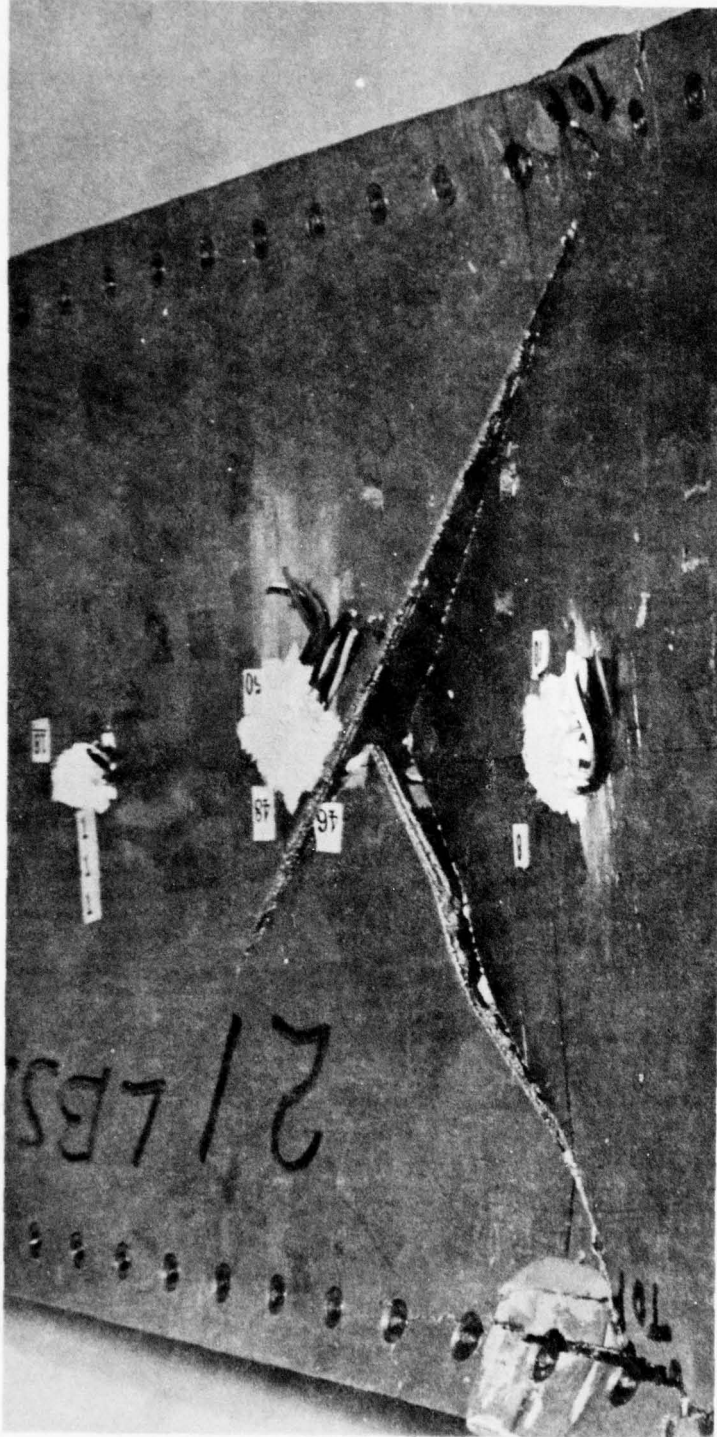


FIGURE 18 - BOX BEAM SUBCOMPONENT FAILURE LOCATION

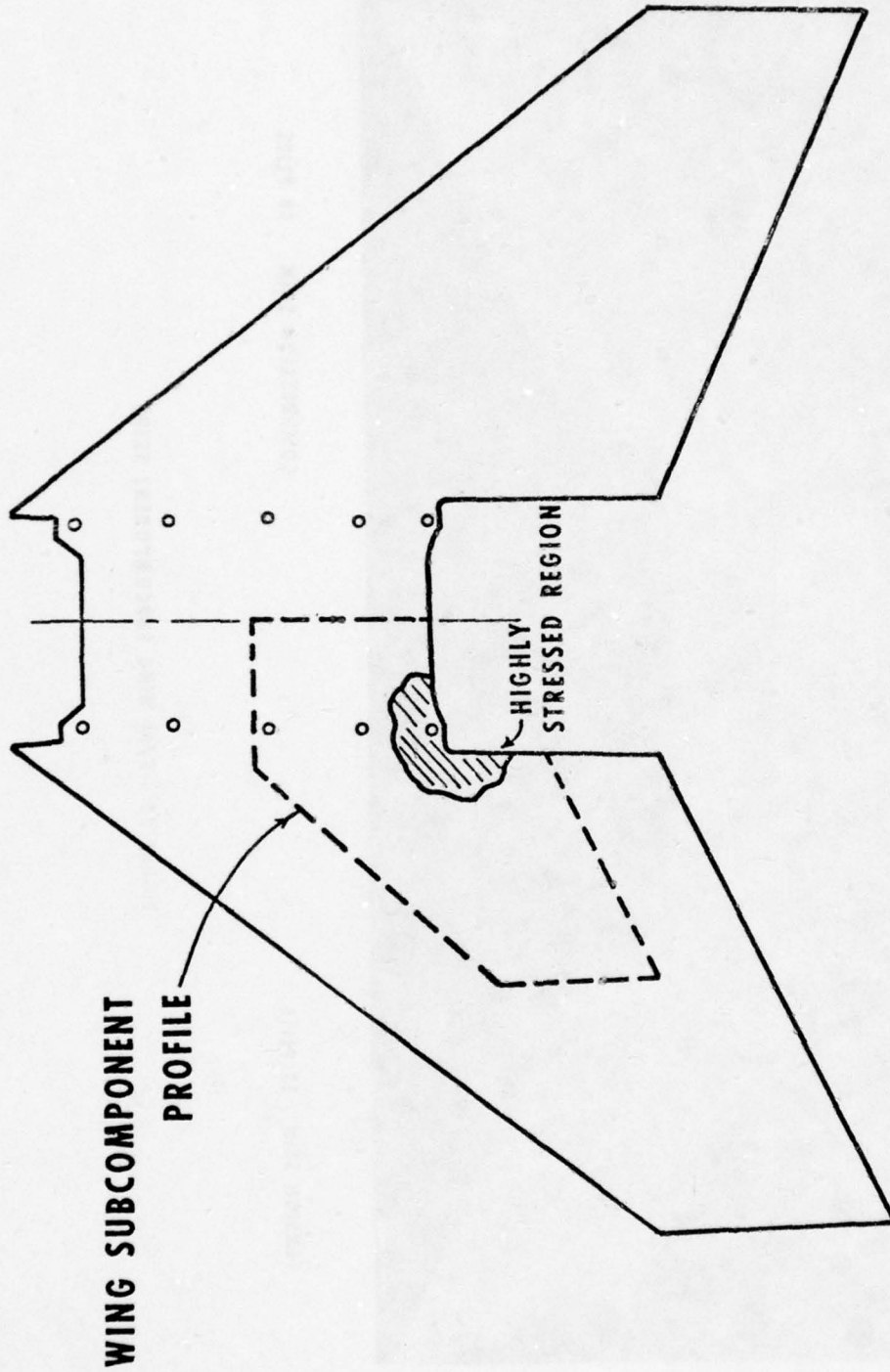
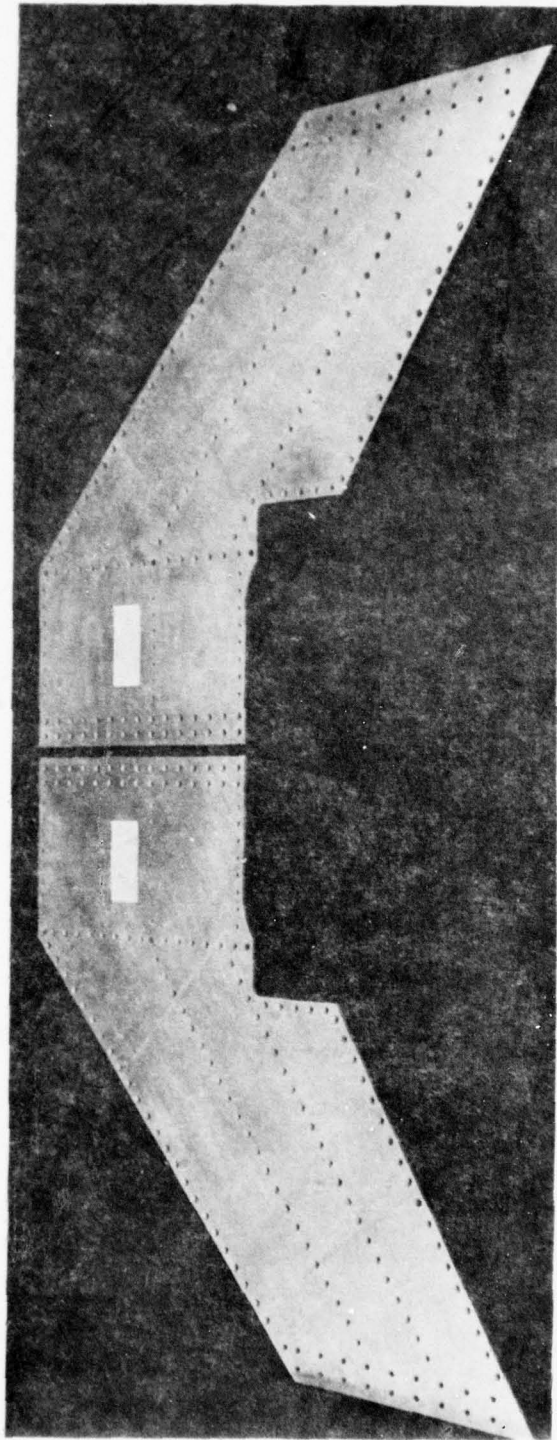


FIGURE 19 - B/AI WING SUBCOMPONENT PROFILE



TENSION SKIN - 13 PLIES

COMPRESSION SKIN - 16 PLIES

FIGURE 20 - B/AI WING SUBCOMPONENT SKINS

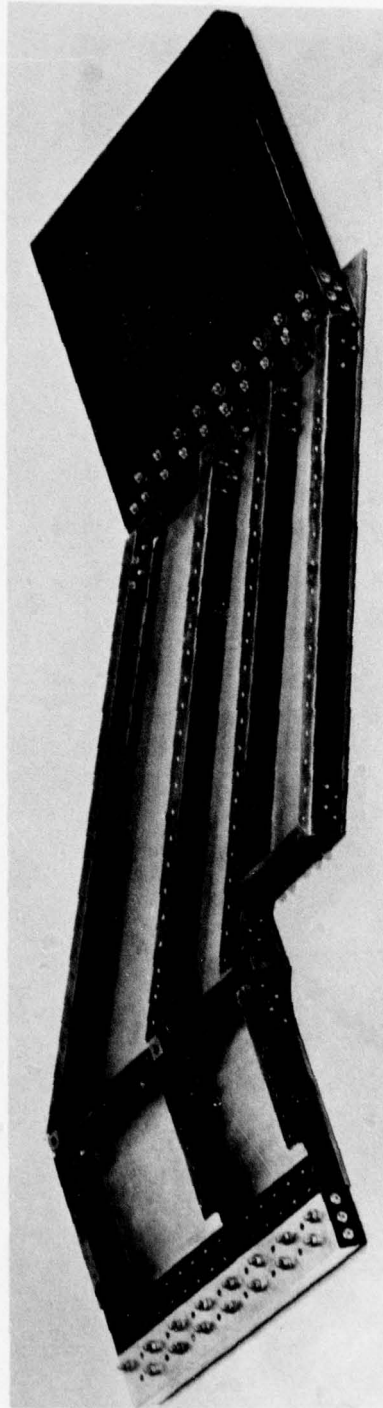


FIGURE 21 - B/AI WING SUBCOMPONENT SUBSTRUCTURE

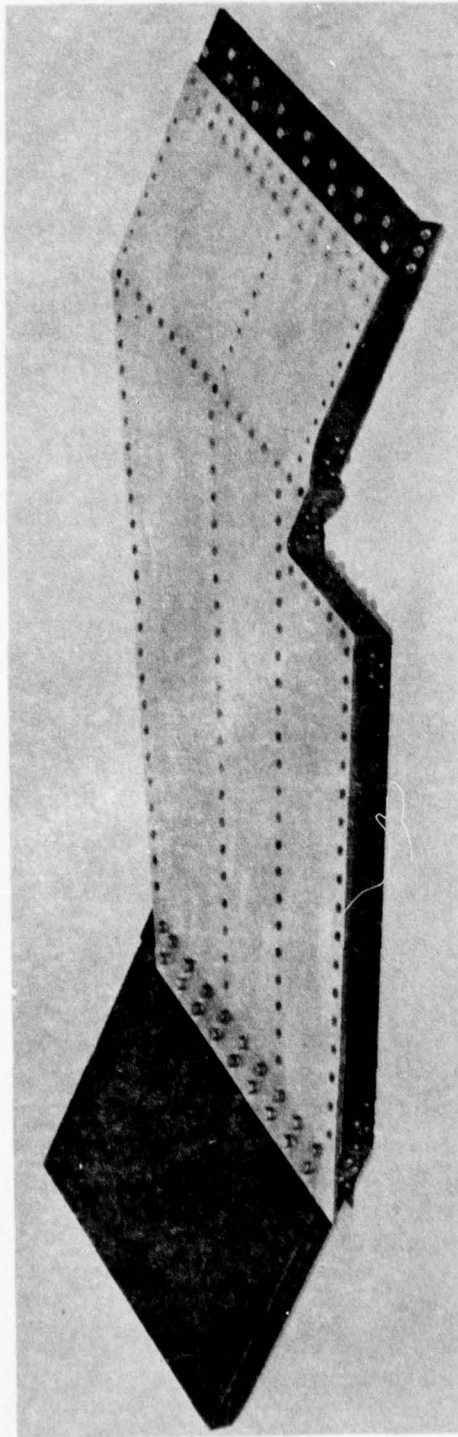


FIGURE 22 - W B/AI WING SUBCOMPONENT FINAL ASSEMBLY

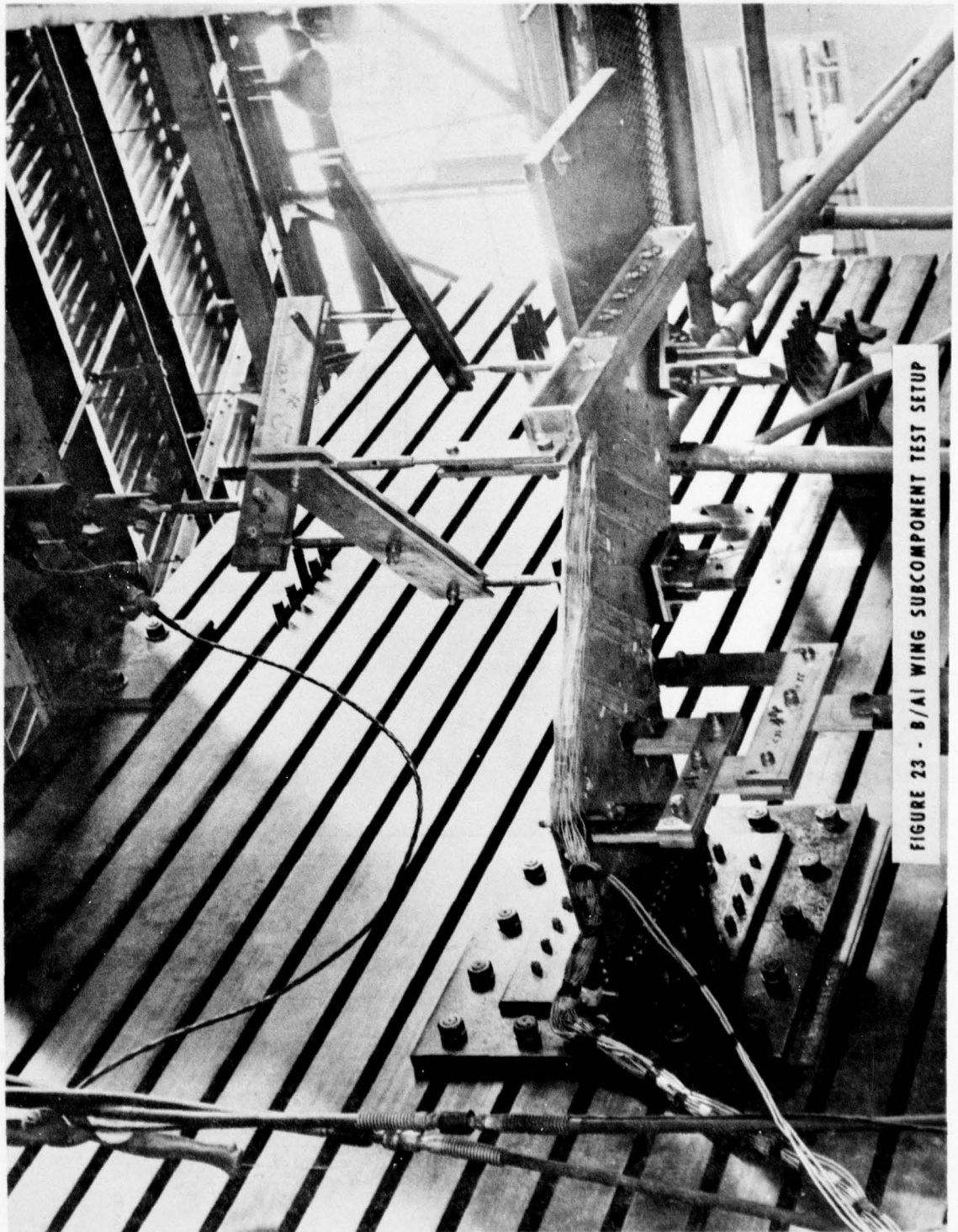
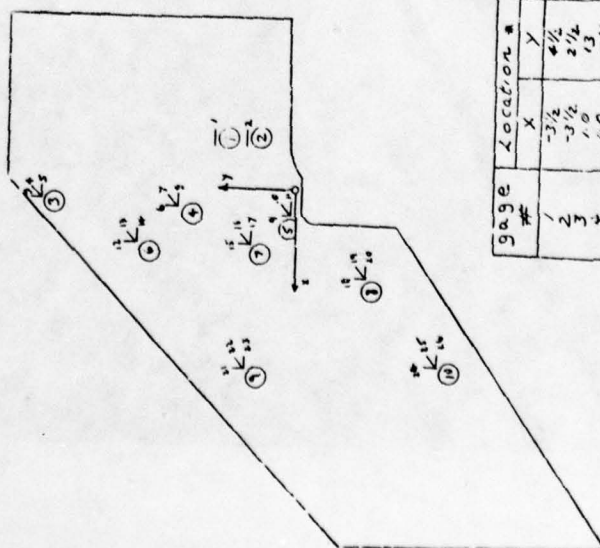


FIGURE 23 - B/AI WING SUBCOMPONENT TEST SETUP

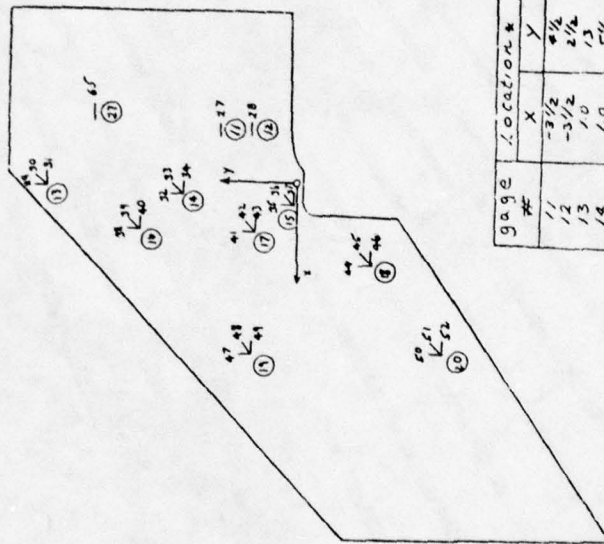
KEY — - axial gage ↙ - rosette



gage #	location	
	X	Y
1	-3 1/2	4 1/2
2	-3 1/2	2 1/2
3	10	13
4	10	5 1/2
5	10	11 1/2
6	3	8 3/4
7	3	2
8	6	-5 1/2
9	10	2 1/4
10	10	-8 1/2

* reference - aft bolt hole

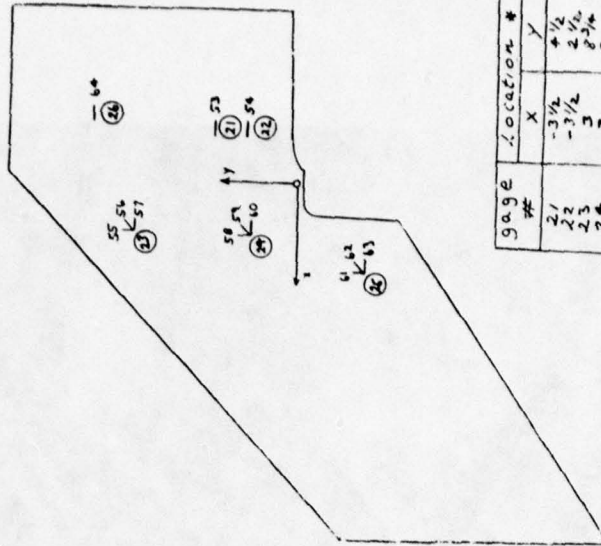
tension skin (external surface)



gage #	location	
	X	Y
11	-3 1/2	4 1/2
12	-3 1/2	2 1/2
13	10	13
14	10	5 1/2
15	10	11 1/2
16	3	8 3/4
17	3	2
18	6	-5 1/2
19	10	2 1/4
20	10	-8 1/2
21	11	-3 3/4

* reference - aft bolt hole

compression skin (external surface)



gage #	location	
	X	Y
22	-3 1/2	4 1/2
23	-3 1/2	2 1/2
24	10	13
25	10	5 1/2
26	10	11 1/2
27	3	8 3/4
28	3	2
29	6	-5 1/2
30	11	-3 3/4

* reference - aft bolt hole

compression skin (internal surface)

Figures 24, 25 & 26 - B/A1 Wing Subcomponent Instrumentation

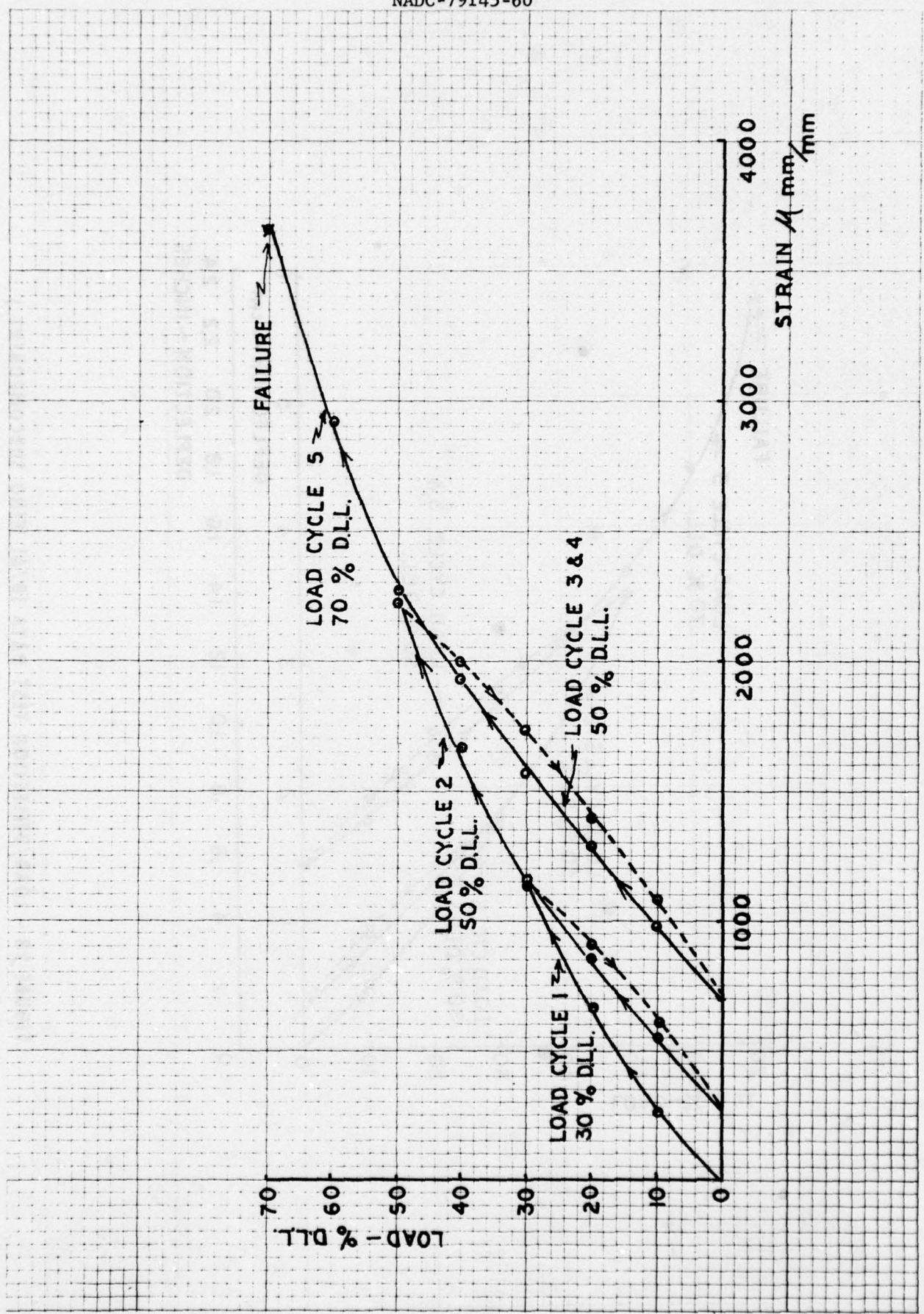


FIGURE 27 - LOAD/STRAIN TEST DATA (B/AI WING SUBCOMPONENT)

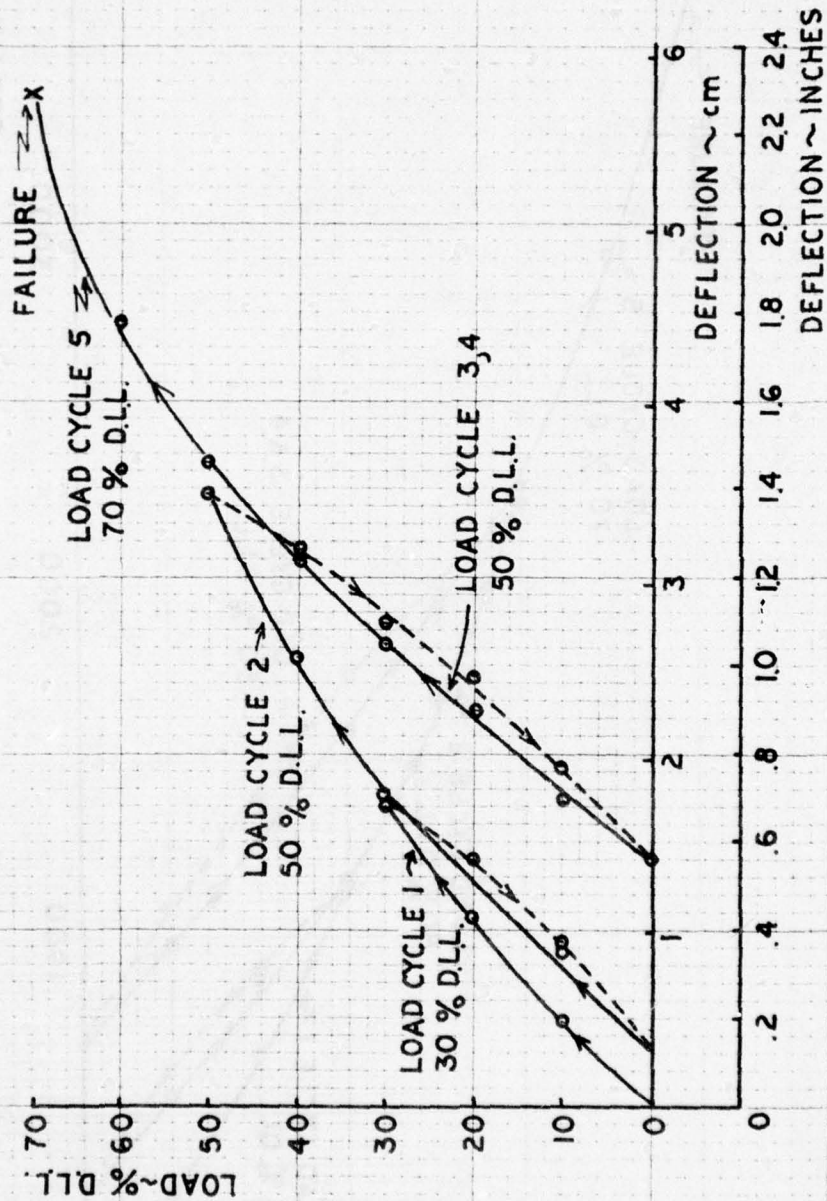


FIGURE 28 - LOAD/DEFLECTION TEST DATA (B/A1 WING SUBCOMPONENT)

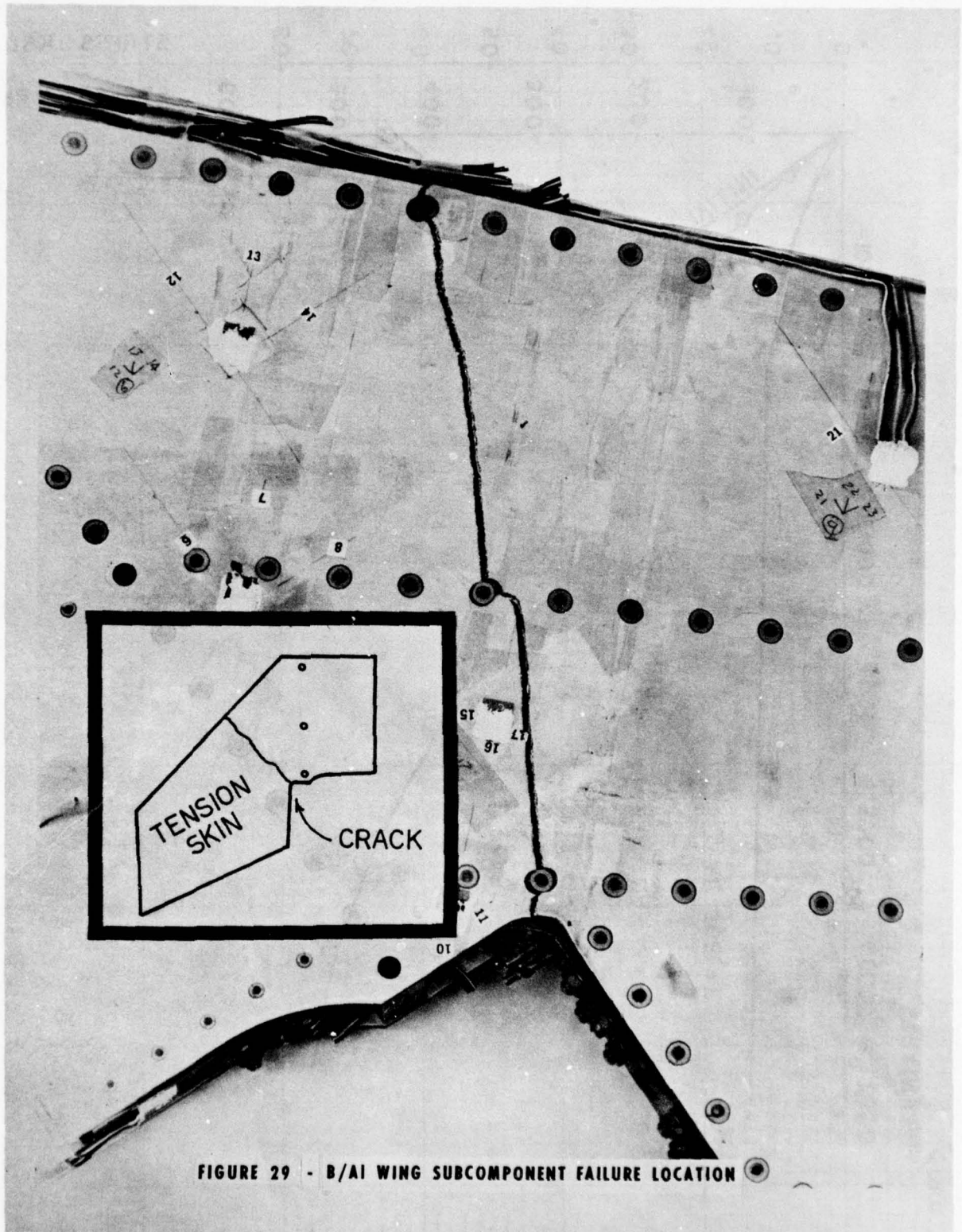


FIGURE 29 - B/AI WING SUBCOMPONENT FAILURE LOCATION

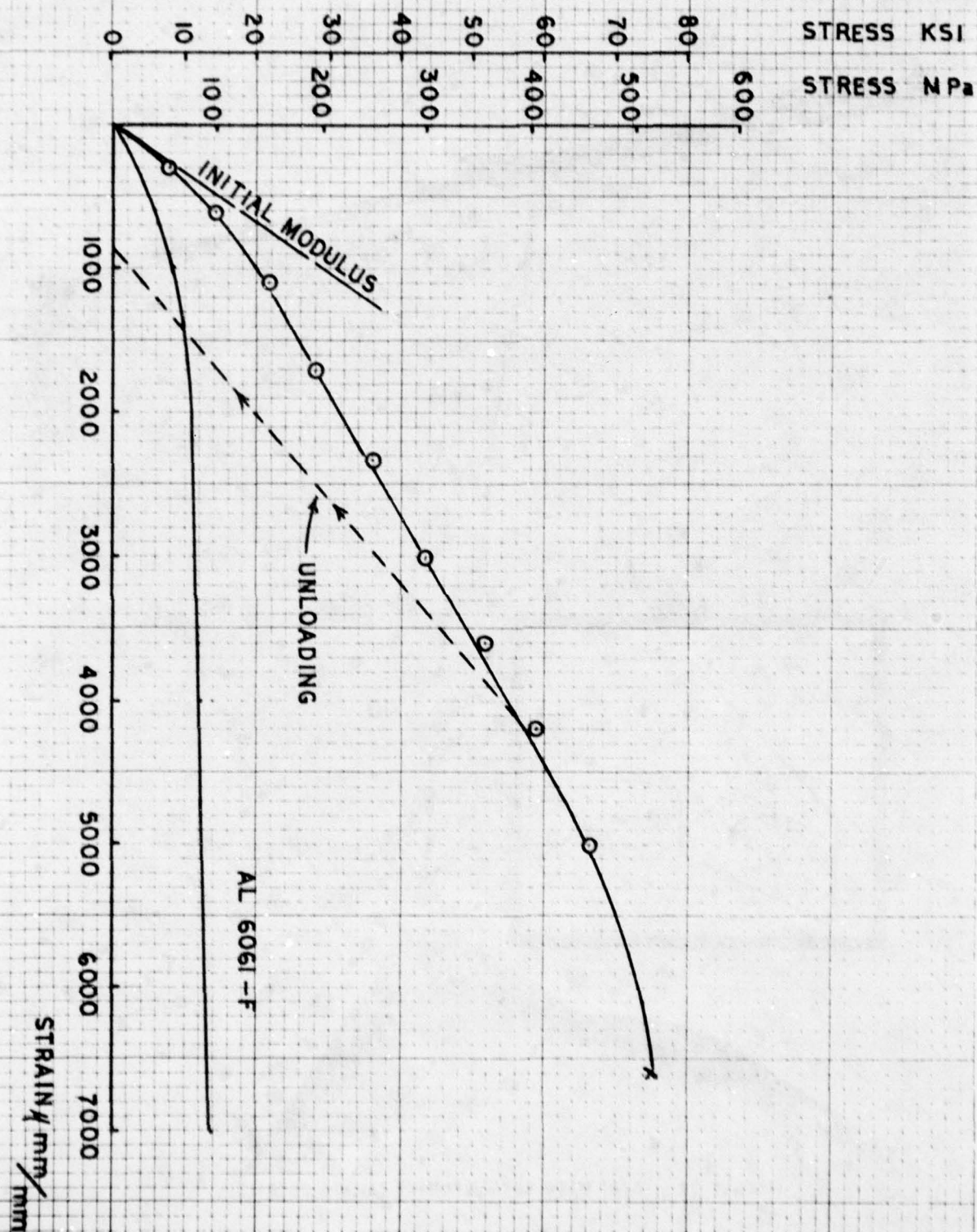


FIGURE 30 - STRESS/STRAIN TEST DATA (B/AI WING SUBCOMPONENT TENSILE SKIN)

NASTRAN Element Number	Nxult KN/m	Nxyult KN/m	Nxcr KN/m	Nxyer KN/m	$\frac{Nxult}{Nxcr}$	$\frac{Nxyult}{Nxyer}$	Margin of Safety
290	-1985	15.6	-9619	13518	.205	.001	3.84
292	-750	896	-7996	13518	.094	.066	6.81
294	-1261	666	-1737	17764	.746	.037	.37
150	-469	620	-3055	5263	.154	.118	3.60
116	-822	299	-800	1072	1.028	.279	-.09
154	-501	267	-698	1091	.718	.245	.26
156	-409	547	-4619	6827	.089	.080	6.36
158	-377	175	-425	641	.887	.273	.04
190	-327	237	-406	808	.805	.293	.11
194	-271	140	-265	403	1.023	.347	-.11
162	-284	110	-294	428	.966	.257	-.03
198	-223	88	-251	344	.888	.256	.05
304	-1020	291	-4588	6094	.223	.048	3.31
166	-216	66	-211	289	1.024	.228	-.07

Table 1 - B/A1 Wing Compression Skin Critical Buckling Loads

Laminate Type	# Specimens	Ult. Tensile Stress (MPa)
0/ \pm 45	5	492.7
90/ \pm 45	5	189.3
\pm 45	6	327.3

Table 2 - Results Tensile Coupon Tests

Laminate Type	# Specimens	Ult. Shear Stress (MPa)
0/ \pm 45	5	257.4
0	5	131.4
\pm 45	5	309.6

Table 3 - Results Rail Shear Coupon Tests

Laminate Type	E ₁ (GPa)	E ₂ (GPa)	G (GPa)	12	21
0/ \pm 45	158.2	131.3	50.5	.331	.307
\pm 45	137.2	137.2	54.9	.364	.364

Table 4 - Experimental Material Property Constants

Wing Skin	Test Dir.	Specimen Number	X-Sect Area (cm ²)	E _l GPa	Prop. Limit MPa	Ult. Load KN	Ult. Stress MPa	Failure Strain m/m	Fibers in Test Direction (%)
-1	90	6240P-A1	.445	175.8	88.3	23.8	541.9	.0080	23.1
-1	90	6240P-A2	.448	173.1	86.2	23.5	530.9	.0075	23.1
-1	0	6240P-A3	.447	120.0	97.9	23.9	532.3	.0066	30.1
-1	0	6240P-A4	.462	157.2	95.2	27.9	612.3	.0066	30.1
-2	90	6241P-A1	.554	151.0	53.8	26.5	484.7	.0088	18.8
-2	90	6241P-A2	.551	134.5	51.0	24.5	450.2	.0077	18.8
-2	0	6241P-A3	.557	163.4	75.8	29.0	528.8	.0065	31.3
-2	0	6241P-A4	.548	102.7	93.1	27.2	504.0	.0064	31.3

Wing Skin -1 (Tension) ----- (0, 90, +45, -45, 0, -45, 90, +45, 0, +45, -45, 90, 0) 13 plyWing Skin -2 (Compression) ----- (0, 90, +45, -45, 0, -45, +45, 0, 0, +45, -45, 90, -45, +45, 90, 0) 16 ply

Table 5 - Wing Subcomponent Skin Tensile Test Results

NADC-79145-60

APPENDIX A

NASTRAN BULK DATA

NASTRAN EXECUTIVE CONTROL DECK ECHO

ID HI-TEMP WING, T NEUR RICHEY, H RUBIN
APP DISPLACEMENT
SOL 1.0
TIME 15
CEXD

2

PAGE

NASTRAN 12/16/77

2, 1978

NOVEMBER

B/L WING STATIC ANALYSIS, EXP. PROP.
 SKIN CHANGES OF 10-31-78 + NEW G11 OF ELEM 289+290(11-2-78)

CARD	COUNT	CASE	CONTROL	DECK	ECHO
1	1	SET 5 =	11,12,15,16,35,36,39,40,59,60,63,64,83,84,87,98,107,108,111,112		
2	2	SPCFORCES =	5		
3	3	ELFORCE =	ALL		
4	4	ELSTRESS =	ALL		
5	5	DISPLACEMENT =	ALL		
6	6	TITLE =	B/L WING STATIC ANALYSIS, EXP. PROP.		
7	7	SUBTITLE =	SKIN CHANGES OF 10-31-78 + NEW G11 OF ELEM 289+290(11-2-78)		
8	8	SURCASE	1		
9	9	LOAD =	10		
10	10	SPC =	10		
11	11	BEGIN	BULK		

*** USER INFORMATION MESSAGE 207, BULK DATA NOT SORTED, XSDRT WILL RE-ORDER DECK.

SORTED BULK DATA ECHO										
CARD COUNT	1	2	3	4	5	6	7	8	9	10
1- CAR 501	11	501	13	0.0	0.0	0.0	1.0	1	.7507	*CAR 501
2- CAR 501	12	502	14	0.0	0.0	0.0	1.0	1	-7665	*CAR 502
3- CAR 502	13	503	15	0.0	0.0	0.0	1.0	1	.7103	*CAR 503
4- CAR 503	14	504	16	0.0	0.0	0.0	1.0	1	-7250	*CAR 504
5- CAR 504	15	505	17	0.0	0.0	0.0	1.0	1	.6713	*CAR 505
6- CAR 505	16	506	18	0.0	0.0	0.0	1.0	1	-6871	*CAR 506
7- CAR 506	17	507	19	0.0	0.0	0.0	1.0	1	.6114	*CAR 507
8- CAR 507	18	508	20	0.0	0.0	0.0	1.0	1	-6324	*CAR 508
9- CAR 508	19	509	21	0.0	0.0	0.0	1.0	1	.5672	*CAR 509
10- CAR 509	20	510	22	0.0	0.0	0.0	1.0	1	-5823	*CAR 510
11- CAR 510	21	511	23	0.0	0.0	0.0	1.0	1	.5230	*CAR 511
12- CAR 511	22	512	24	0.0	0.0	0.0	1.0	1	-5335	*CAR 512
13- CAR 512	23	513	25	0.0	0.0	0.0	1.0	1	.4683	*CAR 513
14- CAR 513	24	514	26	0.0	0.0	0.0	1.0	1	-4793	*CAR 514
15- CAR 514	25	515	27	0.0	0.0	0.0	1.0	1	.4189	*CAR 515
16- CAR 515	26	516	28	0.0	0.0	0.0	1.0	1	-4241	*CAR 516
17- CAR 516	27	517	29	0.0	0.0	0.0	1.0	1	.3694	*CAR 517
18- CAR 517	28	518	30	0.0	0.0	0.0	1.0	1	-3694	*CAR 518
19- CAR 518	29	519	31	0.0	0.0	0.0	1.0	1	.3095	*CAR 519
20- CAR 519	30	520	32	0.0	0.0	0.0	1.0	1	-3095	*CAR 520
21- CAR 520	31	521	33	0.0	0.0	0.0	1.0	1	.7544	*CAR 521
22- CAR 521	32	522	34	0.0	0.0	0.0	1.0	1	-7544	*CAR 522
23- CAR 522	33	523	35	0.0	0.0	0.0	1.0	1	.7507	*CAR 523
24- CAR 523	34	524	36	0.0	0.0	0.0	1.0	1	-7665	*CAR 524
25- CAR 524	35	525	37	0.0	0.0	0.0	1.0	1	.7103	*CAR 525
26- CAR 525	36	526	38	0.0	0.0	0.0	1.0	1		
27- CAR 526	37	527	39	0.0	0.0	0.0	1.0	1		
28- CAR 527	38	528	40	0.0	0.0	0.0	1.0	1		
29- CAR 528	39	529	41	0.0	0.0	0.0	1.0	1		
30- CAR 529	40	530	42	0.0	0.0	0.0	1.0	1		
31- CAR 530	41	531	43	0.0	0.0	0.0	1.0	1		
32- CAR 531	42	532	44	0.0	0.0	0.0	1.0	1		
33- CAR 532	43	533	45	0.0	0.0	0.0	1.0	1		
34- CAR 533	44	534	46	0.0	0.0	0.0	1.0	1		
35- CAR 534	45	535	47	0.0	0.0	0.0	1.0	1		
36- CAR 535	46	536	48	0.0	0.0	0.0	1.0	1		
37- CAR 536	47	537	49	0.0	0.0	0.0	1.0	1		
38- CAR 537	48	538	50	0.0	0.0	0.0	1.0	1		

B/LAL WING STATIC ANALYSIS, EXP. PROP.
SKIN CHANGES OF 10-31-79 + NEW GIL OF ELEM 289+290(11-2-73)

CARD COUNT	1	2	3	4	5	6	7	8	9	10
51-	CAR 525	526	38	40	0.0	0.0	0.0	1.	1	+CAR 526
52-	+CAR 525	0.	39	0.	0.	-7665	0.	0.	-7260	+CAR 527
53-	CAR 527	527	39	41	0.0	0.0	0.0	1.	1	+CAR 527
54-	+CAR 527	0.	40	0.	0.	7103	0.	0.	.6713	+CAR 528
55-	CAR 528	528	40	42	0.0	0.0	0.0	1.	1	+CAR 528
56-	+CAR 528	0.	41	0.	0.	-7260	0.	0.	-6871	+CAR 529
57-	CAR 529	529	41	43	0.0	0.0	0.0	1.	1	+CAR 529
58-	+CAR 529	0.	42	0.	0.	6713	0.	0.	.6114	+CAR 530
59-	CAR 530	530	42	44	0.	0.0	0.0	1.	1	+CAR 530
60-	+CAR 530	0.	43	0.	0.	-6871	0.	0.	-6324	+CAR 531
61-	CAR 531	531	43	45	0.0	0.0	0.0	1.	1	+CAR 531
62-	+CAR 531	0.	44	0.	0.	6114	0.	0.	.5672	+CAR 532
63-	CAR 532	532	44	46	0.0	0.0	0.0	1.	1	+CAR 532
64-	+CAR 532	0.	45	0.	0.	-6324	0.	0.	-5829	+CAR 533
65-	CAR 533	533	45	47	0.0	0.0	0.0	1.	1	+CAR 533
66-	+CAR 533	0.	46	0.	0.	5672	0.	0.	.5230	+CAR 534
67-	CAR 534	534	46	48	0.0	0.0	0.0	1.	1	+CAR 534
68-	+CAR 534	0.	47	0.	0.	-5329	0.	0.	-5335	+CAR 535
69-	CAR 535	535	47	49	0.0	0.0	0.0	1.	1	+CAR 535
70-	+CAR 535	0.	48	0.	0.	5230	0.	0.	.4683	+CAR 536
71-	CAR 536	536	48	50	0.0	0.0	0.0	1.	1	+CAR 536
72-	+CAR 536	0.	49	0.	0.	-5335	0.	0.	-4789	+CAR 537
73-	CAR 537	537	49	51	0.0	0.0	0.0	1.	1	+CAR 537
74-	+CAR 537	0.	50	0.	0.	4683	0.	0.	.4189	+CAR 538
75-	CAR 538	538	50	52	0.0	0.0	0.0	1.	1	+CAR 538
76-	+CAR 538	0.	51	0.	0.	-4789	0.	0.	-4241	+CAR 539
77-	CAR 539	539	51	53	0.0	0.0	0.0	1.	1	+CAR 539
78-	+CAR 539	0.	52	0.	0.	4189	0.	0.	.3694	+CAR 540
79-	CAR 540	540	52	54	0.0	0.0	0.0	1.	1	+CAR 540
80-	+CAR 540	0.	53	0.	0.	-4241	0.	0.	-3694	+CAR 541
81-	CAR 541	541	53	55	0.0	0.0	0.0	1.	1	+CAR 541
82-	+CAR 541	0.	54	0.	0.	3694	0.	0.	.3095	+CAR 542
83-	CAR 542	542	54	56	0.0	0.0	0.0	1.	1	+CAR 542
84-	+CAR 542	0.	55	0.	0.	-3694	0.	0.	-3095	+CAR 543
85-	CAR 543	543	55	57	0.0	0.0	0.0	1.	1	+CAR 543
86-	+CAR 543	0.	56	0.	0.	3095	0.	0.	.2544	+CAR 544
87-	CAR 544	544	56	58	0.0	0.0	0.0	1.	1	+CAR 544
88-	+CAR 544	0.	57	0.	0.	-3095	0.	0.	-2544	+CAR 545
89-	CAR 545	545	57	60	0.0	0.0	0.0	1.	1	+CAR 545
90-	+CAR 545	0.	58	0.	0.	7642	0.	0.	.7507	+CAR 546
91-	CAR 546	546	58	62	0.0	0.0	0.0	1.	1	+CAR 546
92-	+CAR 546	0.	59	0.	0.	-7799	0.	0.	-7665	+CAR 547
93-	CAR 547	547	59	63	0.0	0.0	0.0	1.	1	+CAR 547
94-	+CAR 547	0.	60	0.	0.	7507	0.	0.	.7103	+CAR 548
95-	CAR 548	548	60	64	0.0	0.0	0.0	1.	1	+CAR 548
96-	+CAR 548	0.	61	0.	0.	-7665	0.	0.	-7260	+CAR 549
97-	CAR 549	549	61	65	0.0	0.0	0.0	1.	1	+CAR 549
98-	+CAR 549	0.	62	0.	0.	7103	0.	0.	.6713	+CAR 550
99-	CAR 550	550	62	66	0.0	0.0	0.0	1.	1	+CAR 550
100-	+CAR 550	0.	63	0.	0.	-7260	0.	0.	-6871	

CARD	1	2	3	4	5	6	7	8	9	10
COUNT	1	2	3	4	5	6	7	8	9	10
101-	CAR 551	551	65	67	0.0	0.0	0.0	1.0	1	+CAR 551
102-	+CAR 551		0.	0.	0.0	.6713	0.	0.	.6114	+CAR 552
103-	CAR 552	552	66	68	0.0	0.0	0.0	1.0	1	+CAR 552
104-	+CAR 552		0.	0.	0.0	-.6871	0.	0.	-.6324	+CAR 553
105-	CAR 553	553	67	69	0.0	0.0	0.0	1.0	1	+CAR 553
106-	+CAR 553		0.	0.	0.0	.6114	0.	0.	.5672	+CAR 554
107-	CAR 554	554	68	70	0.0	0.0	0.0	1.0	1	+CAR 554
108-	+CAR 554		0.	0.	0.0	-.6324	0.	0.	-.5829	+CAR 555
109-	CAR 555	555	69	71	0.0	0.0	0.0	1.0	1	+CAR 555
110-	+CAR 555		0.	0.	0.0	.5672	0.	0.	.5230	+CAR 556
111-	CAR 556	556	70	72	0.0	0.0	0.0	1.0	1	+CAR 556
112-	+CAR 556		0.	0.	0.0	-.5829	0.	0.	-.5335	+CAR 557
113-	CAR 557	557	71	73	0.0	0.0	0.0	1.0	1	+CAR 557
114-	+CAR 557		0.	0.	0.0	.5230	0.	0.	.4683	+CAR 558
115-	CAR 558	558	72	74	0.0	0.0	0.0	1.0	1	+CAR 558
116-	+CAR 558		0.	0.	0.0	-.5335	0.	0.	-.4788	+CAR 559
117-	CAR 559	559	73	75	0.0	0.0	0.0	1.0	1	+CAR 559
118-	+CAR 559		0.	0.	0.0	.4683	0.	0.	.4199	+CAR 560
119-	CAR 560	560	74	76	0.0	0.0	0.0	1.0	1	+CAR 560
120-	+CAR 560		0.	0.	0.0	-.4788	0.	0.	-.4241	+CAR 561
121-	CAR 561	561	75	77	0.0	0.0	0.0	1.0	1	+CAR 561
122-	+CAR 561		0.	0.	0.0	.4199	0.	0.	.3694	+CAR 562
123-	CAR 562	562	76	78	0.0	0.0	0.0	1.0	1	+CAR 562
124-	+CAR 562		0.	0.	0.0	-.4241	0.	0.	-.3694	+CAR 563
125-	CAR 563	563	77	79	0.0	0.0	0.0	1.0	1	+CAR 563
126-	+CAR 563		0.	0.	0.0	.3694	0.	0.	.3095	+CAR 564
127-	CAR 564	564	78	80	0.0	0.0	0.0	1.0	1	+CAR 564
128-	+CAR 564		0.	0.	0.0	-.3694	0.	0.	-.3095	+CAR 565
129-	CAR 565	565	79	81	0.0	0.0	0.0	1.0	1	+CAR 565
130-	+CAR 565		0.	0.	0.0	.3095	0.	0.	.2544	+CAR 566
131-	CAR 566	566	80	82	0.0	0.0	0.0	1.0	1	+CAR 566
132-	+CAR 566		0.	0.	0.0	-.3095	0.	0.	-.2544	+CAR 567
133-	CAR 567	567	83	85	0.0	0.0	0.0	1.0	1	+CAR 567
134-	+CAR 567		0.	0.	0.0	.7642	0.	0.	.7507	+CAR 568
135-	CAR 568	568	84	86	0.0	0.0	0.0	1.0	1	+CAR 568
136-	+CAR 568		0.	0.	0.0	-.7507	0.	0.	-.7655	+CAR 569
137-	CAR 569	569	85	87	0.0	0.0	0.0	1.0	1	+CAR 569
138-	+CAR 569		0.	0.	0.0	.7507	0.	0.	.7103	+CAR 570
139-	CAR 570	570	86	88	0.0	0.0	0.0	1.0	1	+CAR 570
140-	+CAR 570		0.	0.	0.0	-.7655	0.	0.	-.7260	+CAR 571
141-	CAR 571	571	87	89	0.0	0.0	0.0	1.0	1	+CAR 571
142-	+CAR 571		0.	0.	0.0	.7103	0.	0.	.6765	+CAR 572
143-	CAR 572	572	88	90	0.0	0.0	0.0	1.0	1	+CAR 572
144-	+CAR 572		0.	0.	0.0	-.7260	0.	0.	-.6871	+CAR 573
145-	CAR 573	573	89	91	0.0	0.0	0.0	1.0	1	+CAR 573
146-	+CAR 573		0.	0.	0.0	.6765	0.	0.	.6165	+CAR 574
147-	CAR 574	574	90	92	0.0	0.0	0.0	1.0	1	+CAR 574
148-	+CAR 574		0.	0.	0.0	-.6871	0.	0.	-.6324	+CAR 575
149-	CAR 575	575	91	93	0.0	0.0	0.0	1.0	1	+CAR 575
150-	+CAR 575		0.	0.	0.0	.6165	0.	0.	.5672	

B/LAL KING STATIC ANALYSIS, EXP. PROJ.
SKIN CHANGES OF 10-31-78 + NEW GUL OF ELEM 289+290(11-2-73)

CARD	1	2	3	4	5	6	7	8	9	10
COUNT	576	576	92	94	94	0.0	0.0	1.	1	10.
151-	CBAR 576									+CAR 576
152-	+CAR 576		92	94	0.	-0.6324	0.	0.	-0.5829	
153-	CBAR 577	577	93	95	0.	0.0	0.0	1.	1	+CAR 577
154-	+CAR 577									
155-	CBAR 578	578	94	96	0.	0.0	0.0	1.	1	+CAR 578
156-	+CAR 578									
157-	CBAR 579	579	95	97	0.	0.0	0.0	1.	1	+CAR 579
158-	+CAR 579									
159-	CBAR 580	580	96	98	0.	0.0	0.0	1.	1	+CAR 580
160-	+CAR 580									
161-	CBAR 581	581	97	99	0.	0.0	0.0	1.	1	+CAR 581
162-	+CAR 581									
163-	CBAR 582	582	98	100	0.	0.0	0.0	1.	1	+CAR 582
164-	+CAR 582									
165-	CBAR 583	583	99	101	0.	0.0	0.0	1.	1	+CAR 583
166-	+CAR 583									
167-	CBAR 584	584	100	102	0.	0.0	0.0	1.	1	+CAR 584
168-	+CAR 584									
169-	CBAR 585	585	101	103	0.	0.0	0.0	1.	1	+CAR 585
170-	+CAR 585									
171-	CBAR 586	586	102	104	0.	0.0	0.0	1.	1	+CAR 586
172-	+CAR 586									
173-	CBAR 587	587	103	105	0.	0.0	0.0	1.	1	+CAR 587
174-	+CAR 587									
175-	CBAR 588	588	104	106	0.	0.0	0.0	1.	1	+CAR 588
176-	+CAR 588									
177-	CBAR 589	589	107	109	0.	0.0	0.0	1.	1	+CAR 589
178-	+CAR 589									
179-	CBAR 590	590	108	110	0.	0.0	0.0	1.	1	+CAR 590
180-	+CAR 590									
181-	CBAR 591	591	109	111	0.	0.0	0.0	1.	1	+CAR 591
182-	+CAR 591									
183-	CBAR 592	592	110	112	0.	0.0	0.0	1.	1	+CAR 592
184-	+CAR 592									
185-	CBAR 593	593	111	113	0.	0.0	0.0	1.	1	+CAR 593
186-	+CAR 593									
187-	CBAR 594	594	112	114	0.	0.0	0.0	1.	1	+CAR 594
188-	+CAR 594									
189-	CBAR 595	595	113	115	0.	0.0	0.0	1.	1	+CAR 595
190-	+CAR 595									
191-	CBAR 596	596	114	116	0.	0.0	0.0	1.	1	+CAR 596
192-	+CAR 596									
193-	CBAR 597	597	115	117	0.	0.0	0.0	1.	1	+CAR 597
194-	+CAR 597									
195-	CBAR 598	598	116	118	0.	0.0	0.0	1.	1	+CAR 598
196-	+CAR 598									
197-	CBAR 599	599	117	119	0.	0.0	0.0	1.	1	+CAR 599
198-	+CAR 599									
199-	CBAR 600	600	118	120	0.	0.0	0.0	1.	1	+CAR 600
200-	+CAR 600									
195-	CBAR 601	601	119	121	0.	0.0	0.0	1.	1	+CAR 601
196-	+CAR 601									
197-	CBAR 602	602	120	122	0.	0.0	0.0	1.	1	+CAR 602
198-	+CAR 602									
199-	CBAR 603	603	121	123	0.	0.0	0.0	1.	1	+CAR 603
200-	+CAR 603									

NADC-79145-60

SORTED BULK DATA ECHO

CARD COUNT	1	2	3	4	5	6	7	8	9	10
201-	CAR 603	603	121	123	0.0	0.0	0.0	1.	1	+CAR 603
202-	+CAR 603	604	0.	0.	.4788	0.	0.	0.	.4294	+CAR 604
203-	CAR 604	604	122	124	0.0	0.0	0.	1.	1	- .4294 +CAR 605
204-	+CAR 604	605	0.	0.	-.4841	0.	0.	1.	1	.3594 +CAR 606
205-	CAR 605	605	123	125	0.0	0.0	0.	0.	1	-.3594 +CAR 607
206-	+CAR 605	606	0.	0.	.4294	0.	0.	0.	1	.3095 +CAR 608
207-	CAR 606	606	124	126	0.0	0.0	0.	1.	1	-.3095 +CAR 609
208-	+CAR 606	607	0.	0.	-.4294	0.	0.	0.	1	.2544 +CAR 610
209-	CAR 607	607	125	127	0.0	0.0	0.	1.	1	-.2544 +CAR 611
210-	+CAR 607	608	0.	0.	.3694	0.	0.	0.	1	0.659 +CAR 612
211-	CAR 608	608	126	128	0.0	0.0	0.	1.	1	-.6481 +CAR 613
212-	+CAR 608	609	0.	0.	-.3694	0.	0.	0.	1	.6324 +CAR 614
213-	CAR 609	609	127	129	0.0	0.0	0.	1.	1	-.5987 +CAR 615
214-	+CAR 609	610	0.	0.	.3095	0.	0.	0.	1	-.5987 +CAR 616
215-	CAR 610	610	128	130	0.0	0.0	0.	1.	1	.5388 +CAR 617
216-	+CAR 610	611	0.	0.	-.3095	0.	0.	0.	1	-.5440 +CAR 618
217-	CAR 611	611	131	133	0.0	0.0	0.	1.	1	.4788 +CAR 619
218-	+CAR 611	612	0.	0.	.7365	-1.000	-0.681	0.	1	-.4941 +CAR 620
219-	CAR 612	612	132	134	0.0	0.0	0.	1.	1	.4294 +CAR 621
220-	+CAR 612	613	0.	0.	-.7470	-1.000	-0.681	0.	1	-.4294 +CAR 622
221-	CAR 613	613	133	135	0.0	0.0	0.	1.	1	.3694 +CAR 623
222-	+CAR 613	614	-1.000	-0.681	0.659	0.	0.	0.	1	-.3694 +CAR 624
223-	CAR 614	614	134	136	0.0	0.0	0.	1.	1	.3095 +CAR 625
224-	+CAR 614	615	-1.000	-0.621	0.0	0.0	0.	0.	1	-.3095 +CAR 626
225-	CAR 615	615	135	137	0.0	0.0	0.	1.	1	.2544 +CAR 627
226-	+CAR 615	616	0.	0.	.6324	0.	0.	0.	1	-.2544 +CAR 628
227-	CAR 616	616	136	138	0.0	0.0	0.	1.	1	0.5992 +CAR 629
228-	+CAR 616	617	0.	0.	-.6481	0.	0.	0.	1	-.5987 +CAR 630
229-	CAR 617	617	137	139	0.0	0.0	0.	1.	1	.5388 +CAR 631
230-	+CAR 617	618	0.	0.	.5987	0.	0.	0.	1	-.5440 +CAR 632
231-	CAR 618	618	138	140	0.0	0.0	0.	1.	1	.4788 +CAR 633
232-	+CAR 618	619	0.	0.	-.5987	0.	0.	0.	1	-.4941 +CAR 634
233-	CAR 619	619	139	141	0.0	0.0	0.	1.	1	.4294 +CAR 635
234-	+CAR 619	620	0.	0.	.5388	0.	0.	0.	1	-.4294 +CAR 636
235-	CAR 620	620	140	142	0.0	0.0	0.	1.	1	.3694 +CAR 637
236-	+CAR 620	621	0.	0.	-.5440	0.	0.	0.	1	-.3694 +CAR 638
237-	CAR 621	621	141	143	0.0	0.0	0.	1.	1	.3095 +CAR 639
238-	+CAR 621	622	0.	0.	.4788	0.	0.	0.	1	-.3095 +CAR 640
239-	CAR 622	622	142	144	0.0	0.0	0.	1.	1	.2544 +CAR 641
240-	+CAR 622	623	0.	0.	-.4941	0.	0.	0.	1	-.2544 +CAR 642
241-	CAR 623	623	143	145	0.0	0.0	0.	1.	1	0.5992 +CAR 643
242-	+CAR 623	624	0.	0.	.4294	0.	0.	0.	1	-.5987 +CAR 644
243-	CAR 624	624	144	146	0.0	0.0	0.	1.	1	.5388 +CAR 645
244-	+CAR 624	625	0.	0.	-.4294	0.	0.	0.	1	-.5440 +CAR 646
245-	CAR 625	625	145	147	0.0	0.0	0.	1.	1	.4788 +CAR 647
246-	+CAR 625	626	0.	0.	-.4941	0.	0.	0.	1	-.4941 +CAR 648
247-	CAR 626	626	146	148	0.0	0.0	0.	1.	1	.4294 +CAR 649
248-	+CAR 626	627	0.	0.	.3694	0.	0.	0.	1	-.3694 +CAR 650
249-	CAR 627	627	147	149	0.0	0.0	0.	1.	1	.3095 +CAR 651
250-	+CAR 627	628	0.	0.	-.3095	0.	0.	0.	1	-.3095 +CAR 652

SORTED BULK DATA ECHO

CARD	1	2	3	4	5	6	7	8	9	10
COUNT										
251-	CAR 628	628	148	150	0.0	0.0	0.0	1.0	1	+CAR 628
252-	CAR 628	629	0.	0.	-0.3095	0.0	0.0	0.	1	-0.2544 +CAR 629
253-	CAR 629	630	151	153	0.0	0.0	0.0	1.0	1	0.411 +CAR 630
254-	CAR 630	631	152	154	0.0	0.0	0.0	1.0	1	-0.594 +CAR 631
255-	CAR 631	632	153	155	0.0	0.0	0.0	1.0	1	-0.417 +CAR 632
256-	CAR 632	633	154	156	-0.594	0.0	0.0	0.	1	0.3826 +CAR 633
257-	CAR 633	634	155	157	-0.417	0.0	0.0	0.	1	-0.3873 +CAR 634
258-	CAR 634	635	156	158	0.0	0.0	0.0	0.	1	0.3571 +CAR 635
259-	CAR 635	636	157	159	0.0	0.0	0.0	0.	1	-0.3571 +CAR 636
260-	CAR 636	637	158	160	0.0	0.0	0.0	0.	1	0.3212 +CAR 637
261-	CAR 637	638	159	161	0.0	0.0	0.0	0.	1	-0.3212 +CAR 638
262-	CAR 638	639	160	162	0.0	0.0	0.0	0.	1	0.2852 +CAR 639
263-	CAR 639	640	161	163	0.0	0.0	0.0	0.	1	-0.2852 +CAR 640
264-	CAR 640	641	162	164	0.0	0.0	0.0	0.	1	0.2492 +CAR 641
265-	CAR 641	642	163	165	0.0	0.0	0.0	0.	1	0.2133 +CAR 642
266-	CAR 642	643	164	166	0.0	0.0	0.0	0.	1	-0.2133 +CAR 643
267-	CAR 643	644	165	167	0.0	0.0	0.0	0.	1	0.1773 +CAR 644
268-	CAR 644	645	166	168	0.0	0.0	0.0	0.	1	-0.1773 +CAR 645
269-	CAR 645	646	167	169	0.0	0.0	0.0	0.	1	0.1442 +CAR 646
270-	CAR 646	647	168	170	0.0	0.0	0.0	0.	1	-0.1442 +CAR 647
271-	CAR 647	648	169	171	0.0	0.0	0.0	0.	1	0.0 +CAR 648
272-	CAR 648	649	170	172	0.0	0.0	0.0	0.	1	0.0 +CAR 649
273-	CAR 649	650	171	173	0.0	0.0	0.0	0.	1	0.0 +CAR 650
274-	CAR 650	651	172	174	0.0	0.0	0.0	0.	1	0.0 +CAR 651
275-	CAR 651	652	173	175	0.0	0.0	0.0	0.	1	0.0 +CAR 652
276-	CAR 652	653	174	176	0.0	0.0	0.0	0.	1	0.0 +CAR 653
277-	CAR 653	654	175	177	0.0	0.0	0.0	0.	1	0.0 +CAR 654
278-	CAR 654	655	176	178	0.0	0.0	0.0	0.	1	0.0 +CAR 655
279-	CAR 655	656	177	179	0.0	0.0	0.0	0.	1	0.0 +CAR 656
280-	CAR 656	657	178	180	0.0	0.0	0.0	0.	1	0.0 +CAR 657
281-	CAR 657	658	179	181	0.0	0.0	0.0	0.	1	0.0 +CAR 658
282-	CAR 658	659	180	182	0.0	0.0	0.0	0.	1	0.0 +CAR 659
283-	CAR 659	660	181	183	0.0	0.0	0.0	0.	1	0.0 +CAR 660
284-	CAR 660	661	182	184	0.0	0.0	0.0	0.	1	0.0 +CAR 661
285-	CAR 661	662	183	185	0.0	0.0	0.0	0.	1	0.0 +CAR 662
286-	CAR 662	663	184	186	0.0	0.0	0.0	0.	1	0.0 +CAR 663
287-	CAR 663	664	185	187	0.0	0.0	0.0	0.	1	0.0 +CAR 664
288-	CAR 664	665	186	188	0.0	0.0	0.0	0.	1	0.0 +CAR 665
289-	CAR 665	666	187	189	0.0	0.0	0.0	0.	1	0.0 +CAR 666
290-	CAR 666	667	188	190	0.0	0.0	0.0	0.	1	0.0 +CAR 667
291-	CAR 667	668	189	191	0.0	0.0	0.0	0.	1	0.0 +CAR 668
292-	CAR 668	669	190	192	0.0	0.0	0.0	0.	1	0.0 +CAR 669
293-	CAR 669	670	191	193	0.0	0.0	0.0	0.	1	0.0 +CAR 670
294-	CAR 670	671	192	194	0.0	0.0	0.0	0.	1	0.0 +CAR 671
295-	CAR 671	672	193	195	0.0	0.0	0.0	0.	1	0.0 +CAR 672
296-	CAR 672	673	194	196	0.0	0.0	0.0	0.	1	0.0 +CAR 673
297-	CAR 673	674	195	197	0.0	0.0	0.0	0.	1	0.0 +CAR 674
298-	CAR 674	675	196	198	0.0	0.0	0.0	0.	1	0.0 +CAR 675
299-	CAR 675	676	197	199	0.0	0.0	0.0	0.	1	0.0 +CAR 676
300-	CAR 676	677	198	200	0.0	0.0	0.0	0.	1	0.0 +CAR 677

3/AL-ING STATIC ANALYSIS, EXP. PROP.
SKIN CHANGES OF 10-31-78 + NEW G11 OF ELEM 299+290(11-2-78)

SORTED BULK DATA ECHO

CARD	1	2	3	4	5	6	7	8	9	10
COUNT	707	707	707	21	22	-6.0758	5.0000	0.0	1	+CAR 707
301-	CAR 707			0.	0.	0.	0.	0.	0.	
302-	CAR 707			0.	0.	0.	0.	0.	0.	
303-	CAR 708			23	24	-5.0768	5.0000	0.0	1	+CAR 708
304-	CAR 708			0.	0.	0.	0.	0.	0.	
305-	CAR 709			25	25	-5.0768	5.0000	0.0	1	+CAR 709
306-	CAR 709			0.	0.	0.	0.	0.	0.	
307-	CAR 710			27	28	-6.0768	5.0000	0.0	1	+CAR 710
308-	CAR 710			0.	0.	0.	0.	0.	0.	
309-	CAR 711			29	30	-6.0768	5.0000	0.0	1	+CAR 711
310-	CAR 711			0.	0.	0.	0.	0.	0.	
311-	CAR 712			31	32	-5.5907	4.6000	0.0	1	+CAR 712
312-	CAR 712			0.	0.	0.	0.	0.	0.	
313-	CAR 713			33	34	-5.5907	4.6000	0.0	1	+CAR 713
314-	CAR 713			0.	0.	0.	0.	0.	0.	
315-	CAR 714			35	36	0.0000	4.5000	0.0	1	+CAR 714
316-	CAR 714			0.	0.	0.	0.	0.	0.	
317-	CAR 715			37	38	0.0000	4.5000	0.0	1	+CAR 715
318-	CAR 715			0.	0.	0.	0.	0.	0.	
319-	CAR 715			39	40	0.0000	4.5000	0.0	1	+CAR 716
320-	CAR 716			0.	0.	0.	0.	0.	0.	
321-	CAR 717			39	40	-5.4597	5.0000	0.0	1	+CAR 717
322-	CAR 717			0.	0.	0.	0.	0.	0.	
323-	CAR 718			41	42	-5.4597	5.0000	0.0	1	+CAR 718
324-	CAR 718			0.	0.	0.	0.	0.	0.	
325-	CAR 719			43	44	-5.4597	5.0000	0.0	1	+CAR 719
326-	CAR 719			0.	0.	0.	0.	0.	0.	
327-	CAR 720			45	46	-5.4597	5.0000	0.0	1	+CAR 720
328-	CAR 720			0.	0.	0.	0.	0.	0.	
329-	CAR 721			47	48	-5.4597	5.0000	0.0	1	+CAR 721
330-	CAR 721			0.	0.	0.	0.	0.	0.	
331-	CAR 722			49	50	-5.4597	5.0000	0.0	1	+CAR 722
332-	CAR 722			0.	0.	0.	0.	0.	0.	
333-	CAR 723			51	52	-5.4597	5.0000	0.0	1	+CAR 723
334-	CAR 723			0.	0.	0.	0.	0.	0.	
335-	CAR 724			53	54	-5.4597	5.0000	0.0	1	+CAR 724
336-	CAR 724			0.	0.	0.	0.	0.	0.	
337-	CAR 725			55	56	-5.0229	4.6000	0.0	1	+CAR 725
338-	CAR 725			0.	0.	0.	0.	0.	0.	
339-	CAR 726			57	58	-5.0229	4.6000	0.0	1	+CAR 726
340-	CAR 726			0.	0.	0.	0.	0.	0.	
341-	CAR 727			59	60	0.0000	4.5000	0.0	1	+CAR 727
342-	CAR 727			0.	0.	0.	0.	0.	0.	
343-	CAR 728			61	62	0.0000	4.5000	0.0	1	+CAR 728
344-	CAR 728			0.	0.	0.	0.	0.	0.	
345-	CAR 729			63	64	0.0000	4.5000	0.0	1	+CAR 729
346-	CAR 729			0.	0.	0.	0.	0.	0.	
347-	CAR 730			63	64	-4.8470	5.0000	0.0	1	+CAR 730
348-	CAR 730			0.	0.	0.	0.	0.	0.	
349-	CAR 731			65	66	-4.8470	5.0000	0.0	1	+CAR 731
350-	CAR 731			0.	0.	0.	0.	0.	0.	

BYAL WING STATIC ANALYSIS. EXP. PRDP.
SKIN CHANGES OF 10-31-78 + NEW GILL OF ELEM 289+290(11-2-78)

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CARD COUNT	1	2	3	4	5	6	7	8	9	10
351-	CAR 732	732	67	68	-4.8470	5.0000	0.0	0.0	1	+CAR 732
352-	+CAR 732		0.	70	0.	0.	0.0	0.	0.	
353-	CAR 733	733	69	70	-4.8470	5.0000	0.0	0.0	1	+CAR 733
354-	+CAR 733		0.		0.	0.	0.0	0.	0.	
355-	CAR 734	734	71	72	-4.8470	5.0000	0.0	0.0	1	+CAR 734
356-	+CAR 734		0.		0.	0.	0.0	0.	0.	
357-	CAR 735	735	73	74	-4.8470	5.0000	0.0	0.0	1	+CAR 735
358-	+CAR 735		0.		0.	0.	0.0	0.	0.	
359-	CAR 736	736	75	76	-4.8470	5.0000	0.0	0.0	1	+CAR 736
360-	+CAR 736		0.		0.	0.	0.0	0.	0.	
361-	CAR 737	737	77	78	-4.8470	5.0000	0.0	0.0	1	+CAR 737
362-	+CAR 737		0.		0.	0.	0.0	0.	0.	
363-	CAR 738	738	79	80	-4.4592	4.6000	0.0	0.0	1	+CAR 738
364-	+CAR 738		0.		0.	0.	0.0	0.	0.	
365-	CAR 739	739	91	82	-4.4592	4.6000	0.0	0.0	1	+CAR 739
366-	+CAR 739		0.		0.	0.	0.0	0.	0.	
367-	CAR 740	740	83	84	.0000	4.5000	0.0	0.0	1	+CAR 740
368-	+CAR 740		0.		0.	0.	0.0	0.	0.	
369-	CAR 741	741	85	86	.0000	4.5000	0.0	0.0	1	+CAR 741
370-	+CAR 741		0.		0.	0.	0.0	0.	0.	
371-	CAR 742	742	87	88	.0000	4.5000	0.0	0.0	1	+CAR 742
372-	+CAR 742		0.		0.	0.	0.0	0.	0.	
373-	CAR 743	743	87	88	-4.2343	5.0000	0.0	0.0	1	+CAR 743
374-	+CAR 743		0.		0.	0.	0.0	0.	0.	
375-	CAR 744	744	89	90	-4.2343	5.0000	0.0	0.0	1	+CAR 744
376-	+CAR 744		0.		0.	0.	0.0	0.	0.	
377-	CAR 745	745	91	92	-4.2343	5.0000	0.0	0.0	1	+CAR 745
378-	+CAR 745		0.		0.	0.	0.0	0.	0.	
379-	CAR 746	746	93	94	-4.2343	5.0000	0.0	0.0	1	+CAR 746
380-	+CAR 746		0.		0.	0.	0.0	0.	0.	
381-	CAR 747	747	95	96	-4.2343	5.0000	0.0	0.0	1	+CAR 747
382-	+CAR 747		0.		0.	0.	0.0	0.	0.	
383-	CAR 748	748	97	98	-4.2343	5.0000	0.0	0.0	1	+CAR 748
384-	+CAR 748		0.		0.	0.	0.0	0.	0.	
385-	CAR 749	749	99	100	-4.2343	5.0000	0.0	0.0	1	+CAR 749
386-	+CAR 749		0.		0.	0.	0.0	0.	0.	
387-	CAR 750	750	101	102	-4.2343	5.0000	0.0	0.0	1	+CAR 750
388-	+CAR 750		0.		0.	0.	0.0	0.	0.	
389-	CAR 751	751	103	104	-3.8956	4.6000	0.0	0.0	1	+CAR 751
390-	+CAR 751		0.		0.	0.	0.0	0.	0.	
391-	CAR 752	752	105	106	-3.8956	4.6000	0.0	0.0	1	+CAR 752
392-	+CAR 752		0.		0.	0.	0.0	0.	0.	
393-	CAR 753	753	107	109	.0000	4.5000	0.0	0.0	1	+CAR 753
394-	+CAR 753		0.		0.	0.	0.0	0.	0.	
395-	CAR 754	754	109	110	.0000	4.5000	0.0	0.0	1	+CAR 754
396-	+CAR 754		0.		0.	0.	0.0	0.	0.	
397-	CAR 755	755	111	112	.0000	4.5000	0.0	0.0	1	+CAR 755
398-	+CAR 755		0.		0.	0.	0.0	0.0	0.	
399-	CAR 756	756	111	117	-3.8042	5.0000	0.0	0.0	1	+CAR 756
400-	+CAR 756		0.		-1.097	0.	-1.097	0.	0.	

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3-DAL KING STATIC ANALYSIS. EXP. PROP.
SKIN CHANGES OF 10-31-78 + NEW GIL OF ELEM 289+290(11-2-78)

SORTED BULK DATA ECHO

CARD	1	2	3	4	5	6	7	8	9	10
401-	CAR 757	757	113	114	0.	-3.9042	5.0000	0.0	0.	+CAR 757
402-	+CAR 757	758	115	115	0.	-3.9042	5.0000	0.0	0.	+CAR 758
403-	+CAR 758	759	117	118	0.	-3.8042	5.0000	0.0	0.	+CAR 759
404-	+CAR 759	760	119	120	0.	-3.8042	5.0000	0.0	0.	+CAR 760
405-	+CAR 760	761	121	122	0.	-3.8042	5.0000	0.0	0.	+CAR 761
406-	+CAR 761	762	123	124	0.	-3.8042	5.0000	0.0	0.	+CAR 762
407-	+CAR 762	763	125	126	0.	-3.8042	5.0000	0.0	0.	+CAR 763
408-	+CAR 763	764	127	128	0.	-3.4998	4.6000	0.0	0.	+CAR 764
409-	+CAR 764	765	129	130	0.	-3.4998	4.6000	0.0	0.	+CAR 765
410-	+CAR 765	766	131	132	0.	-3.4029	5.0000	0.0	0.	+CAR 766
411-	+CAR 766	767	133	134	0.	-3.4029	5.0000	0.0	0.	+CAR 767
412-	+CAR 767	768	135	136	0.	-3.4029	5.0000	0.0	0.	+CAR 768
413-	+CAR 768	769	137	138	0.	-3.4029	5.0000	0.0	0.	+CAR 769
414-	+CAR 769	770	139	140	0.	-3.4029	5.0000	0.0	0.	+CAR 770
415-	+CAR 770	771	141	142	0.	-3.4029	5.0000	0.0	0.	+CAR 771
416-	+CAR 771	772	143	144	0.	-3.4029	5.0000	0.0	0.	+CAR 772
417-	+CAR 772	773	145	146	0.	-3.4029	5.0000	0.0	0.	+CAR 773
418-	+CAR 773	774	147	148	0.	-3.1307	4.6000	0.0	0.	+CAR 774
419-	+CAR 774	775	149	150	0.	-3.1307	4.6000	0.0	0.	+CAR 775
420-	+CAR 775	776	151	152	0.	-2.9720	5.0000	0.0	0.	+CAR 776
421-	+CAR 776	777	153	154	0.	-2.9720	5.0000	0.0	0.	+CAR 777
422-	+CAR 777	778	155	156	0.	-2.9720	5.0000	0.0	0.	+CAR 778
423-	+CAR 778	779	157	158	0.	-2.9720	5.0000	0.0	0.	+CAR 779
424-	+CAR 779	780	159	160	0.	-2.9720	5.0000	0.0	0.	+CAR 780
425-	+CAR 780	781	161	162	0.	-2.9720	5.0000	0.0	0.	+CAR 781
426-	+CAR 781	782	163	164	0.	-2.9720	5.0000	0.0	0.	+CAR 782
427-	+CAR 782	783	165	166	0.	-2.9720	5.0000	0.0	0.	+CAR 783
428-	+CAR 783	784	167	168	0.	-2.9720	5.0000	0.0	0.	+CAR 784
429-	+CAR 784	785	169	170	0.	-2.9720	5.0000	0.0	0.	+CAR 785
430-	+CAR 785	786	171	172	0.	-2.9720	5.0000	0.0	0.	+CAR 786
431-	+CAR 786	787	173	174	0.	-2.9720	5.0000	0.0	0.	+CAR 787
432-	+CAR 787	788	175	176	0.	-2.9720	5.0000	0.0	0.	+CAR 788
433-	+CAR 788	789	177	178	0.	-2.9720	5.0000	0.0	0.	+CAR 789
434-	+CAR 789	790	179	180	0.	-2.9720	5.0000	0.0	0.	+CAR 790
435-	+CAR 790	791	181	182	0.	-2.9720	5.0000	0.0	0.	+CAR 791
436-	+CAR 791	792	183	184	0.	-2.9720	5.0000	0.0	0.	+CAR 792
437-	+CAR 792	793	185	186	0.	-2.9720	5.0000	0.0	0.	+CAR 793
438-	+CAR 793	794	187	188	0.	-2.9720	5.0000	0.0	0.	+CAR 794
439-	+CAR 794	795	189	190	0.	-2.9720	5.0000	0.0	0.	+CAR 795
440-	+CAR 795	796	191	192	0.	-2.9720	5.0000	0.0	0.	+CAR 796
441-	+CAR 796	797	193	194	0.	-2.9720	5.0000	0.0	0.	+CAR 797
442-	+CAR 797	798	195	196	0.	-2.9720	5.0000	0.0	0.	+CAR 798
443-	+CAR 798	799	197	198	0.	-2.9720	5.0000	0.0	0.	+CAR 799
444-	+CAR 799	800	199	200	0.	-2.9720	5.0000	0.0	0.	+CAR 800
445-	+CAR 800	801	201	202	0.	-2.9720	5.0000	0.0	0.	+CAR 801
446-	+CAR 801	802	203	204	0.	-2.9720	5.0000	0.0	0.	+CAR 802
447-	+CAR 802	803	205	206	0.	-2.9720	5.0000	0.0	0.	+CAR 803
448-	+CAR 803	804	207	208	0.	-2.9720	5.0000	0.0	0.	+CAR 804
449-	+CAR 804	805	209	210	0.	-2.9720	5.0000	0.0	0.	+CAR 805
450-	+CAR 805	806	211	212	0.	-2.9720	5.0000	0.0	0.	+CAR 806

3/AL JING STATIC ANALYSIS, EXP. PROC.
SKIN CHANGES OF 10-31-78 + NEW GII OF ELEM 290+290(11-2-78)

CARD	1	2	3	4	5	6	7	8	9	10
COUNT	1	2	3	4	5	6	7	8	9	10
451-	CAR 732	732	163	164	0.	-2.9720	5.0000	0.0	1	+CAR 782
452-	+CAR 782	733	155	166	0.	0.	0.	0.	0.	+CAR 783
453-	CAR 783	783	157	168	0.	0.	0.	0.	0.	+CAR 784
454-	+CAR 783	784	157	168	0.	0.	0.	0.	0.	+CAR 785
455-	CAR 784	784	157	168	0.	0.	0.	0.	0.	+CAR 785
456-	+CAR 784	785	159	170	0.	0.	0.	0.	0.	+CAR 785
457-	CAR 785	785	159	170	0.	0.	0.	0.	0.	+CAR 785
458-	+CAR 785	785	159	170	0.	0.	0.	0.	0.	+CAR 785
459-	CAR 1101	1101	1	15	0.	0.0	0.0	1.	1	+CAR 1101
460-	+CAR 1101	1102	1	16	0.	0.0	0.0	1.	1	+CAR 1102
461-	CAR 1102	1102	1	16	0.	0.0	0.0	1.	1	+CAR 1102
462-	+CAR 1102	1103	15	39	0.	-0.0000	2.250	2.735	1	+CAR 1103
463-	CAR 1103	1103	15	39	0.	0.0	0.0	1.	1	+CAR 1103
464-	+CAR 1103	1104	15	40	0.	0.0	0.0	1.	1	+CAR 1104
465-	CAR 1104	1104	15	40	0.	0.0	0.0	1.	1	+CAR 1104
466-	+CAR 1104	1105	39	63	0.	0.0	0.0	1.	1	+CAR 1105
467-	CAR 1105	1105	39	63	0.	0.0	0.0	1.	1	+CAR 1105
468-	+CAR 1105	1106	40	64	0.	0.0	0.0	1.	1	+CAR 1106
469-	CAR 1106	1106	40	64	0.	0.0	0.0	1.	1	+CAR 1106
470-	+CAR 1106	1107	63	87	0.	0.0	0.0	1.	1	+CAR 1107
471-	CAR 1107	1107	63	87	0.	0.0	0.0	1.	1	+CAR 1107
472-	+CAR 1107	1108	64	88	0.	0.0	0.0	1.	1	+CAR 1108
473-	CAR 1108	1108	64	88	0.	0.0	0.0	1.	1	+CAR 1108
474-	+CAR 1108	1109	37	111	0.	0.0	0.0	1.	1	+CAR 1109
475-	CAR 1109	1109	37	111	0.	0.0	0.0	1.	1	+CAR 1109
476-	+CAR 1109	1110	38	112	0.	0.0	0.0	1.	1	+CAR 1110
477-	CAR 1110	1110	38	112	0.	0.0	0.0	1.	1	+CAR 1110
478-	+CAR 1110	1111	131	131	0.	0.0	0.0	1.	1	+CAR 1111
479-	CAR 1111	1111	131	131	0.	0.0	0.0	1.	1	+CAR 1111
480-	+CAR 1111	1112	182	132	0.	0.0	0.0	1.	1	+CAR 1112
481-	CAR 1112	1112	182	132	0.	0.0	0.0	1.	1	+CAR 1112
482-	+CAR 1112	1113	131	151	0.	0.0	0.0	1.	1	+CAR 1113
483-	CAR 1113	1113	131	151	0.	0.0	0.0	1.	1	+CAR 1113
484-	+CAR 1113	1114	132	152	0.	0.0	0.0	1.	1	+CAR 1114
485-	CAR 1114	1114	132	152	0.	0.0	0.0	1.	1	+CAR 1114
486-	+CAR 1114	1115	151	171	0.	0.0	0.0	1.	1	+CAR 1115
487-	CAR 1115	1115	151	171	0.	0.0	0.0	1.	1	+CAR 1115
488-	+CAR 1115	1116	152	171	0.	0.0	0.0	1.	1	+CAR 1116
489-	CAR 1116	1116	152	171	0.	0.0	0.0	1.	1	+CAR 1116
490-	+CAR 1116	1117	10	33	0.	0.0	0.0	1.	1	+CAR 1117
491-	CAR 1117	1117	10	33	0.	0.0	0.0	1.	1	+CAR 1117
492-	+CAR 1117	1118	10	34	0.	0.0	0.0	1.	1	+CAR 1118
493-	CAR 1118	1118	10	34	0.	0.0	0.0	1.	1	+CAR 1118
494-	+CAR 1118	1119	33	57	0.	0.0	0.0	1.	1	+CAR 1119
495-	CAR 1119	1119	33	57	0.	0.0	0.0	1.	1	+CAR 1119
496-	+CAR 1119	1120	34	58	0.	0.0	0.0	1.	1	+CAR 1120
497-	CAR 1120	1120	34	58	0.	0.0	0.0	1.	1	+CAR 1120
498-	+CAR 1120	1121	57	81	0.	0.0	0.0	1.	1	+CAR 1121
499-	CAR 1121	1121	57	81	0.	0.0	0.0	1.	1	+CAR 1121
500-	+CAR 1121	1122	0.	0.	0.	0.0	0.0	1.	1	+CAR 1122

SORTED BULK DATA ECHO

CARD	1	2	3	4	5	6	7	8	9	10
CARD	1122	1122	1122	82	0.0	0.0	0.0	1.0	1	+CAR1122
501-	+CAR1122	0.	0.	0.	0.	0.	0.	0.	1	-.2544
502-	+CAR1123	1123	1123	105	0.0	0.0	0.0	1.0	1	+CAR1123
503-	+CAR1123	0.	0.	0.	0.	0.	0.	0.	1	-.2544
504-	+CAR1124	1124	1124	106	0.0	0.0	0.0	1.0	1	+CAR1124
505-	+CAR1124	0.	0.	0.	0.	0.	0.	0.	1	-.2544
506-	+CAR1125	1125	1125	129	0.0	0.0	0.0	1.0	1	+CAR1125
507-	+CAR1125	0.	0.	0.	0.	0.	0.	0.	1	-.2544
508-	+CAR1126	1126	1126	130	0.0	0.0	0.0	1.0	1	+CAR1126
509-	+CAR1126	0.	0.	0.	0.	0.	0.	0.	1	-.2544
510-	+CAR1127	1127	1127	149	0.0	0.0	0.0	1.0	1	+CAR1127
511-	+CAR1127	0.	0.	0.	0.	0.	0.	0.	1	-.2544
512-	+CAR1128	1128	1128	150	0.0	0.0	0.0	1.0	1	+CAR1128
513-	+CAR1128	0.	0.	0.	0.	0.	0.	0.	1	-.2544
514-	+CAR1129	1129	1129	169	0.0	0.0	0.0	1.0	1	+CAR1129
515-	+CAR1129	0.	0.	0.	0.	0.	0.	0.	1	-.2544
516-	+CAR1130	1130	1130	170	0.0	0.0	0.0	1.0	1	+CAR1130
517-	+CAR1130	0.	0.	0.	0.	0.	0.	0.	1	-.2544
518-	+CAR1131	1131	1131	180	0.0	0.0	0.0	1.0	1	+CAR1131
519-	+CAR1131	0.	0.	0.	0.	0.	0.	0.	1	-.2544
520-	+CAR1132	1132	1132	180	0.0	0.0	0.0	1.0	1	+CAR1132
521-	+CAR1132	0.	0.	0.	0.	0.	0.	0.	1	-.2544
522-	+CAR1133	1133	1133	16	1.0000	0.0000	0.0000	0.0	1	+CAR1133
523-	+CAR1133	0.	0.	0.	0.	0.	0.	0.	1	-.2544
524-	+CAR1134	1134	1134	16	1.0000	0.0000	0.0000	0.0	1	+CAR1134
525-	+CAR1134	0.	0.	0.	0.	0.	0.	0.	1	-.2544
526-	+CAR1135	1135	1135	40	0.0	0.0	0.0	0.0	1	+CAR1135
527-	+CAR1135	0.	0.	0.	0.	0.	0.	0.	1	-.2544
528-	+CAR1136	1136	1136	64	0.0	0.0	0.0	0.0	1	+CAR1136
529-	+CAR1136	0.	0.	0.	0.	0.	0.	0.	1	-.2544
530-	+CAR1137	1137	1137	88	0.0	0.0	0.0	0.0	1	+CAR1137
531-	+CAR1137	0.	0.	0.	0.	0.	0.	0.	1	-.2544
532-	+CAR1138	1138	1138	112	0.0	0.0	0.0	0.0	1	+CAR1138
533-	+CAR1138	0.	0.	0.	0.	0.	0.	0.	1	-.2544
534-	+CAR1139	1139	1139	112	0.0	0.0	0.0	0.0	1	+CAR1139
535-	+CAR1139	0.	0.	0.	0.	0.	0.	0.	1	-.2544
536-	+CAR1140	1140	1140	132	0.0	0.0	0.0	0.0	1	+CAR1140
537-	+CAR1140	0.	0.	0.	0.	0.	0.	0.	1	-.2544
538-	+CAR1141	1141	1141	152	0.0	0.0	0.0	0.0	1	+CAR1141
539-	+CAR1141	0.	0.	0.	0.	0.	0.	0.	1	-.2544
540-	+CAR1142	1142	1142	34	0.0	0.0	0.0	0.0	1	+CAR1142
541-	+CAR1142	0.	0.	0.	0.	0.	0.	0.	1	-.2544
542-	+CAR1143	1143	1143	58	0.0	0.0	0.0	0.0	1	+CAR1143
543-	+CAR1143	0.	0.	0.	0.	0.	0.	0.	1	-.2544
544-	+CAR1144	1144	1144	82	0.0	0.0	0.0	0.0	1	+CAR1144
545-	+CAR1144	0.	0.	0.	0.	0.	0.	0.	1	-.2544
546-	+CAR1145	1145	1145	106	0.0	0.0	0.0	0.0	1	+CAR1145
547-	+CAR1145	0.	0.	0.	0.	0.	0.	0.	1	-.2544
548-	+CAR1146	1146	1146	130	0.0	0.0	0.0	0.0	1	+CAR1146
549-	+CAR1146	0.	0.	0.	0.	0.	0.	0.	1	-.2544
550-	+CAR1147	1147	1147	0.	0.0	0.0	0.0	0.0	1	+CAR1147

3/AL WING STATIC ANALYSIS, 740. 2470.
 SKIN CHANGES OF 10-31-78 + NEW 311 IF ELEM 289+270(11-1-78)

CARD	1	2	3	4	5	6	7	8	9	10
COUNT	1	2	3	4	5	6	7	8	9	10
551-	C8AR	1315	1315	149	190	1.0000	.0000	0.0	1	+CAR1315
552-	+CAR1315			0.	0.	0.	0.	0.	0.	
553-	C8AR	1315	1316	169	170	1.0000	.0000	0.0	1	+CAR1316
554-	+CAR1316			0.	0.	0.	0.	0.	0.	
555-	C8AR	1317	757	191	192	-3.8042	5.0	0.0	1	+C2
556-	C8AR	1313	593	111	181	0	0	1.0	1	
557-	+C2			0.0	-1.097	0.71	0.0	0.0	0.695	+C1
558-	C8AR	1319	593	181	113	0	0	1.0	1	
559-	+C1			0.0	0.0	0.695	0.0	0.0	0.677	+C4
560-	C8AR	1320	594	112	182	0	0	1.0	1	
561-	+C4			0.0	-1.097	-0.726	0.0	0.0	-0.708	+C3
562-	C8AR	1321	594	132	114	0	0	1.0	1	
563-	+C3			0.0	0.0	-0.708	0.0	0.0	-0.697	+CAR2001
564-	C8AR	2001	2001	11	35	12	0.	0.	2	
565-	+CAR2001			0.	0.	.113	0.	0.	.113	+CAR2002
566-	C8AR	2002	2001	12	36	11	0.	0.	2	
567-	+CAR2002			0.	0.	-1.129	0.	0.	-1.129	+CAP2003
568-	C8AR	2003	2001	35	59	36	0.	0.	2	
569-	+CAR2003			0.	0.	.113	0.	0.	.113	+CAR2004
570-	C8AR	2004	2001	35	60	35	0.	0.	2	
571-	+CAR2004			0.	0.	-1.129	0.	0.	-1.129	+CAR2005
572-	C8AR	2005	2001	59	83	60	0.	0.	2	
573-	+CAR2005			0.	0.	.113	0.	0.	.113	+CAR2006
574-	C8AR	2006	2001	60	84	59	0.	0.	2	
575-	+CAR2006			0.	0.	-1.129	0.	0.	-1.129	+CAR2007
576-	C8AR	2007	2001	93	107	84	0.	0.	2	
577-	+CAR2007			0.	0.	.113	0.	0.	.113	+CAR2008
578-	C8AR	2008	2001	94	108	83	0.	0.	2	
579-	+CAR2008			0.	0.	-1.129	0.	0.	-1.129	
580-	C8AR	2009	15	16	11	5	0.0	0.0	0.0	
581-	+C8AR			39	40	5	0.0	0.0	0.0	
582-	C8AR	3	63	64	11	5	0.0	0.0	0.0	
583-	+C8AR			87	98	5	0.0	0.0	0.0	
584-	C8AR	5	111	112	11	5	0.0	0.0	0.0	
585-	+C8AR			0	0.0	0.0	0.0	0.0	0.0	+CS1
586-	+CS1	1.	0.	0.	0.	0.	0.	0.	0.	
587-	C8AR	299	1113	35	11	13	37	+90.		
588-	C8AR	299	1216	36	12	14	33	+90.		
589-	C8AR	291	1113	37	13	15	39	+90.		
590-	C8AR	292	1216	38	14	16	40	+90.		
591-	C8AR	293	1113	59	35	37	61	+90.		
592-	C8AR	294	1216	60	36	38	62	+90.		
593-	C8AR	295	1113	61	37	39	63	+90.		
594-	C8AR	296	1216	62	38	40	64	+90.		
595-	C8AR	297	1113	83	59	61	85	+90.		
596-	C8AR	298	1216	84	60	62	86	+90.		
597-	C8AR	299	1113	85	61	63	87	+90.		
598-	C8AR	300	1216	86	62	64	88	+90.		
599-	C8AR	301	1113	107	83	85	109	+90.		
600-	C8AR	302	1216	108	84	86	110	+90.		

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SORTED BULK DATA ECHO

CARD COUNT	1	2	3	4	5	6	7	8	9	10
601-	COJAD1 303	301	109	85	87	111
602-	COJAD1 304	301	110	86	88	112	..	..	..	..
603-	CPJAL 1	1011	15	1	2	-45.	..	..	..	..
604-	CPJAL 2	1011	16	1	2	-45.	..	..	..	..
605-	CPJAL 3	1011	2	17	15	-45.	..	..	..	..
606-	CPJAL 4	1011	2	18	16	-45.	..	..	..	..
607-	CPJAL 5	1011	17	2	3	-45.	..	..	..	..
608-	CPJAL 6	1011	18	2	3	-45.	..	..	..	..
609-	CPJAL 7	1011	3	19	17	-45.	..	..	..	..
610-	CPJAL 8	1011	20	20	18	-45.	..	..	..	..
611-	CPJAL 9	1011	19	3	4	-45.	..	..	..	..
612-	CPJAL 10	1011	20	3	4	-45.	..	..	..	..
613-	CPJAL 11	1011	4	21	19	-45.	..	..	..	..
614-	CPJAL 12	1011	4	22	20	-45.	..	..	..	..
615-	CPJAL 13	1011	21	4	5	-45.	..	..	..	..
616-	CPJAL 14	1011	22	4	5	-45.	..	..	..	..
617-	CPJAL 15	1011	5	23	21	-45.	..	..	..	..
618-	CPJAL 16	1011	5	24	22	-45.	..	..	..	..
619-	CPJAL 17	1011	23	5	6	-45.	..	..	..	..
620-	CPJAL 18	1011	24	5	6	-45.	..	..	..	..
621-	CPJAL 19	1011	5	25	23	-45.	..	..	..	..
622-	CPJAL 20	1011	5	26	24	-45.	..	..	..	..
623-	CPJAL 21	1011	25	5	7	-45.	..	..	..	..
624-	CPJAL 22	1011	26	6	7	-45.	..	..	..	..
625-	CPJAL 23	1011	7	27	25	-45.	..	..	..	..
626-	CPJAL 24	1011	7	28	26	-45.	..	..	..	..
627-	CPJAL 25	1011	27	7	8	-45.	..	..	..	..
628-	CPJAL 26	1011	28	7	8	-45.	..	..	..	..
629-	CPJAL 27	1011	8	29	27	-45.	..	..	..	..
630-	CPJAL 28	1011	8	30	29	-45.	..	..	..	..
631-	CPJAL 29	1011	29	9	9	-45.	..	..	..	..
632-	CPJAL 30	1011	30	8	9	-45.	..	..	..	..
633-	CPJAL 31	1011	9	31	29	-45.	..	..	..	..
634-	CPJAL 32	1011	9	32	30	-45.	..	..	..	..
635-	CPJAL 33	1011	31	9	10	-45.	..	..	..	..
636-	CPJAL 34	1011	32	9	10	-45.	..	..	..	..
637-	CPJAL 35	1011	10	33	31	-45.	..	..	..	..
638-	CPJAL 36	1011	10	34	32	-45.	..	..	..	..
639-	CPJAL 37	1110	39	15	17	-45.	..	..	..	..
640-	CPJAL 38	1216	40	16	18	-45.	..	..	..	..
641-	CPJAL 39	1100	17	41	39	-45.	..	..	..	..
642-	CPJAL 40	1215	13	42	40	-45.	..	..	..	..
643-	CPJAL 41	1106	41	47	19	-45.	..	..	..	..
644-	CPJAL 42	1215	42	18	20	-45.	..	..	..	..
645-	CPJAL 43	1107	19	43	41	-45.	..	..	..	..
646-	CPJAL 44	1212	20	44	42	-45.	..	..	..	..
647-	CPJAL 45	1107	43	19	21	-45.	..	..	..	..
648-	CPJAL 46	1212	44	20	22	-45.	..	..	..	..
649-	CPJAL 47	1126	21	45	43	-45.	..	..	..	..
650-	CPJAL 48	1210	22	46	44	-45.	..	..	..	..

BIAL WING STATIC ANALYSIS, EXP. PR30.
SKIN CHANGES OF 10-31-73 + NEW GIL OF ELEM 289+293(11-2-79)

CARD	1	2	3	4	5	6	7	8	9	10
651-	CIRIAL 49	1106	45	21	23	-45.				
652-	CIRIAL 50	1209	45	22	24	-45.				
653-	CIRIAL 51	1105	23	47	45	-45.				
654-	CIRIAL 52	1209	24	48	46	-45.				
655-	CIRIAL 53	1105	47	23	25	-45.				
656-	CIRIAL 54	1208	48	24	26	-45.				
657-	CIRIAL 55	1104	25	49	47	-45.				
658-	CIRIAL 56	1207	26	50	48	-45.				
659-	CIRIAL 57	1104	49	25	27	-45.				
660-	CIRIAL 58	1207	50	26	28	-45.				
661-	CIRIAL 59	1104	27	51	49	-45.				
662-	CIRIAL 60	1206	28	52	50	-45.				
663-	CIRIAL 61	1104	51	27	29	-45.				
664-	CIRIAL 62	1205	52	28	30	-45.				
665-	CIRIAL 63	1104	29	53	31	-45.				
666-	CIRIAL 64	1205	30	54	32	-45.				
667-	CIRIAL 65	1104	53	29	31	-45.				
668-	CIRIAL 66	1204	54	30	32	-45.				
669-	CIRIAL 67	1104	31	55	53	-45.				
670-	CIRIAL 68	1204	32	56	54	-45.				
671-	CIRIAL 69	1104	55	31	33	-45.				
672-	CIRIAL 70	1204	56	32	34	-45.				
673-	CIRIAL 71	1104	33	57	55	-45.				
674-	CIRIAL 72	1204	34	58	56	-45.				
675-	CIRIAL 73	1110	53	39	41	-45.				
676-	CIRIAL 74	1216	64	40	42	-45.				
677-	CIRIAL 75	1109	41	65	63	-45.				
678-	CIRIAL 76	1216	42	66	64	-45.				
679-	CIRIAL 77	1108	65	41	43	-45.				
680-	CIRIAL 78	1212	66	42	44	-45.				
681-	CIRIAL 79	1107	43	67	65	-45.				
682-	CIRIAL 80	1212	44	68	66	-45.				
683-	CIRIAL 81	1107	67	43	45	-45.				
684-	CIRIAL 82	1210	68	44	46	-45.				
685-	CIRIAL 83	1106	45	69	67	-45.				
686-	CIRIAL 84	1210	46	70	68	-45.				
687-	CIRIAL 85	1106	69	45	47	-45.				
688-	CIRIAL 86	1209	70	46	48	-45.				
689-	CIRIAL 87	1105	47	71	69	-45.				
690-	CIRIAL 88	1208	48	72	70	-45.				
691-	CIRIAL 89	1105	71	47	49	-45.				
692-	CIRIAL 90	1207	72	48	50	-45.				
693-	CIRIAL 91	1104	49	73	71	-45.				
694-	CIRIAL 92	1206	50	74	72	-45.				
695-	CIRIAL 93	1104	73	49	51	-45.				
696-	CIRIAL 94	1206	74	50	52	-45.				
697-	CIRIAL 95	1104	51	75	73	-45.				
698-	CIRIAL 96	1205	52	76	74	-45.				
699-	CIRIAL 97	1104	75	51	53	-45.				
700-	CIRIAL 98	1205	75	52	54	-45.				

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SORTED BULK DATA ECHO

CARD	COUNT	1	2	3	4	5	6	7	8	9	10
701-	CR1A1	99	1104	53	77	75	-45.				
702-	CR1A1	100	1204	54	78	76	-45.				
703-	CR1A1	101	1104	77	53	55	-45.				
704-	CR1A1	102	1204	78	54	56	-45.				
705-	CR1A1	103	1104	55	79	77	-45.				
706-	CR1A1	104	1204	56	80	78	-45.				
707-	CR1A1	105	1104	79	55	57	-45.				
708-	CR1A1	106	1204	90	56	58	-45.				
709-	CR1A1	107	1104	57	81	79	-45.				
710-	CR1A1	108	1204	58	82	90	-45.				
711-	CR1A1	109	1110	37	63	65	-45.				
712-	CR1A1	110	1216	38	64	66	-45.				
713-	CR1A1	111	1110	65	89	37	-45.				
714-	CR1A1	112	1216	66	90	88	-45.				
715-	CR1A1	113	1109	89	65	67	-45.				
716-	CR1A1	114	1212	90	66	68	-45.				
717-	CR1A1	115	1108	67	91	89	-45.				
718-	CR1A1	116	1212	63	92	90	-45.				
719-	CR1A1	117	1107	91	67	69	-45.				
720-	CR1A1	118	1210	92	68	70	-45.				
721-	CR1A1	119	1107	69	93	91	-45.				
722-	CR1A1	120	1209	70	94	92	-45.				
723-	CR1A1	121	1106	93	69	71	-45.				
724-	CR1A1	122	1208	94	70	72	-45.				
725-	CR1A1	123	1105	71	95	93	-45.				
726-	CR1A1	124	1207	72	96	94	-45.				
727-	CR1A1	125	1105	95	71	73	-45.				
728-	CR1A1	126	1206	96	72	74	-45.				
729-	CR1A1	127	1104	73	97	95	-45.				
730-	CR1A1	128	1206	74	98	96	-45.				
731-	CR1A1	129	1104	97	73	75	-45.				
732-	CR1A1	130	1205	98	74	76	-45.				
733-	CR1A1	131	1104	75	99	97	-45.				
734-	CR1A1	132	1204	76	100	98	-45.				
735-	CR1A1	133	1104	99	75	77	-45.				
736-	CR1A1	134	1204	100	76	78	-45.				
737-	CR1A1	135	1104	77	101	99	-45.				
738-	CR1A1	136	1204	78	102	100	-45.				
739-	CR1A1	137	1104	101	77	79	-45.				
740-	CR1A1	138	1204	102	78	80	-45.				
741-	CR1A1	139	1104	79	103	101	-45.				
742-	CR1A1	140	1204	80	104	102	-45.				
743-	CR1A1	141	1104	103	79	81	-45.				
744-	CR1A1	142	1204	104	80	82	-45.				
745-	CR1A1	143	1104	31	105	103	-45.				
746-	CR1A1	144	1204	92	106	104	-45.				
747-	CR1A1	145	145	111	97	89	-45.0				
748-	CR1A1	146	145	112	88	90	-45.				
749-	CR1A1	147	149	113	89	91	-45.				
750-	CR1A1	150	149	114	90	92	-45.				

NOVEMBER 2, 1978

MASTRAN 12/16/77

3/AL KING STATIC ANALYSIS, EXP. PROP.
SKIN CHANGES OF 10-31-78 + NEW GIL OF ELEM 209+290(11-2-78)

SORTED BULK DATA ECHO

CARD	COUNT	1	2	3	4	5	6	7	8	9	10
751-	CR1A1	171	149	91	115	113	-45.				
752-	CR1A1	172	149	92	116	114	-45.				
753-	CR1A1	173	1107	115	91	93	-45.				
754-	CR1A1	174	1209	116	92	94	-45.				
755-	CR1A1	175	1106	93	117	115	-45.				
756-	CR1A1	176	1208	94	118	116	-45.				
757-	CR1A1	177	1105	117	93	95	-45.				
758-	CR1A1	178	1207	118	94	96	-45.				
759-	CR1A1	179	1105	95	119	117	-45.				
760-	CR1A1	180	1206	96	120	118	-45.				
761-	CR1A1	181	1104	119	95	97	-45.				
762-	CR1A1	182	1205	120	96	98	-45.				
763-	CR1A1	183	1104	97	121	119	-45.				
764-	CR1A1	184	1205	98	122	120	-45.				
765-	CR1A1	185	1104	121	97	99	-45.				
766-	CR1A1	186	1204	122	98	100	-45.				
767-	CR1A1	187	1104	99	123	121	-45.				
768-	CR1A1	188	1204	100	124	122	-45.				
769-	CR1A1	189	1104	123	99	101	-45.				
770-	CR1A1	190	1204	124	100	102	-45.				
771-	CR1A1	191	1104	101	125	123	-45.				
772-	CR1A1	192	1204	102	126	124	-45.				
773-	CR1A1	193	1104	125	101	103	-45.				
774-	CR1A1	194	1204	126	102	104	-45.				
775-	CR1A1	195	1104	103	127	125	-45.				
776-	CR1A1	196	1204	104	128	126	-45.				
777-	CR1A1	197	1104	127	103	105	-45.				
778-	CR1A1	198	1204	128	104	106	-45.				
779-	CR1A1	199	1104	105	129	127	-45.				
780-	CR1A1	200	1204	106	130	128	-45.				
781-	CR1A1	201	145	113	133	131	-45.				
782-	CR1A1	202	145	114	134	132	-45.				
783-	CR1A1	203	149	133	134	132	-45.				
784-	CR1A1	204	149	134	113	115	-45.				
785-	CR1A1	205	1105	115	135	133	-45.				
786-	CR1A1	206	1206	116	135	134	-45.				
787-	CR1A1	207	1105	135	115	117	-45.				
788-	CR1A1	208	1208	136	116	118	-45.				
789-	CR1A1	209	1105	117	137	135	-45.				
790-	CR1A1	210	1206	118	138	136	-45.				
791-	CR1A1	211	1104	137	117	119	-45.				
792-	CR1A1	212	1206	138	118	120	-45.				
793-	CR1A1	213	1104	139	119	120	-45.				
794-	CR1A1	214	1205	120	140	138	-45.				
795-	CR1A1	215	1104	139	119	121	-45.				
796-	CR1A1	216	1205	140	120	122	-45.				
797-	CR1A1	217	1104	121	141	139	-45.				
798-	CR1A1	218	1204	122	142	140	-45.				
799-	CR1A1	219	1104	141	121	123	-45.				
800-	CR1A1	220	1204	142	122	124	-45.				

3/AL WING STATIC ANALYSIS, EXP. PROJ.
SKIN CHANGES OF 10-31-78 + NEW GIL OF ELEM 289+293(11-2-78)

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SORTED BULK DATA ECHO

CARD	1	2	3	4	5	6	7	8	9	10
801-	CIRIAL 203	1104	123	143	141	-45.				
802-	CIRIAL 204	1204	124	144	142	-45.				
803-	CIRIAL 205	1104	123	143	125	-45.				
804-	CIRIAL 206	1204	144	124	126	-45.				
805-	CIRIAL 207	1104	125	145	143	-45.				
806-	CIRIAL 208	1204	126	146	144	-45.				
807-	CIRIAL 209	1104	145	125	127	-45.				
808-	CIRIAL 210	1204	146	126	128	-45.				
809-	CIRIAL 211	1104	127	147	145	-45.				
810-	CIRIAL 212	1204	128	148	146	-45.				
811-	CIRIAL 213	1104	147	127	129	-45.				
812-	CIRIAL 214	1204	148	128	130	-45.				
813-	CIRIAL 215	1104	129	149	147	-45.				
814-	CIRIAL 216	1204	130	150	148	-45.				
815-	CIRIAL 217	1105	151	131	133	-45.				
816-	CIRIAL 218	1207	152	132	134	-45.				
817-	CIRIAL 219	1105	133	153	151	-45.				
818-	CIRIAL 220	1207	134	154	152	-45.				
819-	CIRIAL 221	1105	153	133	135	-45.				
820-	CIRIAL 222	1207	154	134	136	-45.				
821-	CIRIAL 223	1105	135	155	153	-45.				
822-	CIRIAL 224	1207	136	156	154	-45.				
823-	CIRIAL 225	1105	155	135	137	-45.				
824-	CIRIAL 226	1207	156	136	138	-45.				
825-	CIRIAL 227	1104	137	157	155	-45.				
826-	CIRIAL 228	1206	138	158	156	-45.				
827-	CIRIAL 229	1104	157	137	139	-45.				
828-	CIRIAL 230	1206	158	138	140	-45.				
829-	CIRIAL 231	1104	139	159	157	-45.				
830-	CIRIAL 232	1205	140	160	158	-45.				
831-	CIRIAL 233	1104	139	139	141	-45.				
832-	CIRIAL 234	1205	160	140	142	-45.				
833-	CIRIAL 235	1104	141	161	159	-45.				
834-	CIRIAL 236	1204	142	162	160	-45.				
835-	CIRIAL 237	1104	151	141	143	-45.				
836-	CIRIAL 238	1204	152	142	144	-45.				
837-	CIRIAL 239	1104	143	163	161	-45.				
838-	CIRIAL 240	1204	144	164	162	-45.				
839-	CIRIAL 241	1104	163	143	145	-45.				
840-	CIRIAL 242	1204	164	144	146	-45.				
841-	CIRIAL 243	1104	145	165	163	-45.				
842-	CIRIAL 244	1204	146	166	164	-45.				
843-	CIRIAL 245	1104	155	145	147	-45.				
844-	CIRIAL 246	1204	166	146	148	-45.				
845-	CIRIAL 247	1104	147	167	165	-45.				
846-	CIRIAL 248	1204	148	168	166	-45.				
847-	CIRIAL 249	1104	167	147	149	-45.				
848-	CIRIAL 250	1204	168	148	150	-45.				
849-	CIRIAL 251	1104	149	169	167	-45.				
850-	CIRIAL 252	1204	150	170	168	-45.				

B/LAL ATING STATIC ANALYSIS, EXP. PROP.
SKIN CHANGES OF 10-31-78 + NEW GIL OF ELEM 299+290(11-2-78)

CARD	1	2	3	4	5	6	7	8	9	10
CCUNT	1	2	3	4	5	6	7	8	9	10
851-	CRIAL	253	1105	171	151	153	-45.			
852-	CRIAL	254	1207	171	152	154	-45.			
853-	CRIAL	255	1105	153	172	171	-45.			
854-	CRIAL	256	1207	154	172	171	-45.			
855-	CRIAL	257	1105	172	153	155	-45.			
856-	CRIAL	258	1206	172	154	156	-45.			
857-	CRIAL	259	1104	155	173	172	-45.			
858-	CRIAL	260	1206	156	173	172	-45.			
859-	CRIAL	261	1104	173	155	157	-45.			
860-	CRIAL	262	1206	173	156	158	-45.			
861-	CRIAL	263	1104	157	174	173	-45.			
862-	CRIAL	264	1205	158	174	173	-45.			
863-	CRIAL	265	1104	174	157	159	-45.			
864-	CRIAL	266	1205	174	158	160	-45.			
865-	CRIAL	267	1104	159	175	174	-45.			
866-	CRIAL	268	1204	160	176	174	-45.			
867-	CRIAL	269	1104	175	159	161	-45.			
868-	CRIAL	270	1204	175	160	162	-45.			
869-	CRIAL	271	1104	161	176	175	-45.			
870-	CRIAL	272	1204	162	176	175	-45.			
871-	CRIAL	273	1104	176	161	163	-45.			
872-	CRIAL	274	1204	176	162	164	-45.			
873-	CRIAL	275	1104	163	177	176	-45.			
874-	CRIAL	276	1204	164	177	176	-45.			
875-	CRIAL	277	1104	177	163	165	-45.			
876-	CRIAL	278	1204	177	164	166	-45.			
877-	CRIAL	279	1104	165	178	177	-45.			
878-	CRIAL	280	1204	165	178	177	-45.			
879-	CRIAL	281	1104	178	165	167	-45.			
880-	CRIAL	282	1204	178	166	168	-45.			
881-	CRIAL	283	1104	167	179	178	-45.			
882-	CRIAL	284	1204	168	179	178	-45.			
883-	CRIAL	285	1104	179	167	169	-45.			
884-	CRIAL	286	1204	179	168	170	-45.			
885-	CRIAL	287	1104	169	180	179	-45.			
886-	CRIAL	288	1204	170	180	179	-45.			
887-	CRIAL	289	239	39	181	111	-34.892			
888-	CRIAL	290	239	90	182	112	-34.882			
889-	CRIAL	291	145	89	113	181	-45.0			
890-	CRIAL	292	145	90	114	182	-45.0			
891-	CRIAL	293	145	131	181	113	-45.0			
892-	CRIAL	294	145	132	182	114	-45.0			
893-	ELGR	5	GIV	0.0	250.	6				
894-	+EIS	MAX								
895-	FORCE	1	2	1	1.0	.0	97.3			
896-	FORCE	1	3	1	1.0	0.0	147.8			
897-	FORCE	1	4	1	1.0	0.0	157.0			
898-	FORCE	1	5	1	1.0	0.0	135.7			
899-	FORCE	1	6	1	1.0	0.0	120.2			
900-	FORCE	1	7	1	1.0	0.0	114.0			

+EIS

NADC-79145-60

CARD	1	2	3	4	5	6	7	8	9	10
COUNT	1	2	3	4	5	6	7	8	9	10
901-	FOR	8	1	1.0	0.0	0.0	0.0	109.5		
902-	FOR	9	1	1.0	0.0	0.0	0.0	39.7		
903-	FOR	17	1	1.0	0.0	0.0	0.0	143.2		
904-	FOR	19	1	1.0	0.0	0.0	0.0	193.2		
905-	FOR	21	1	1.0	0.0	0.0	0.0	224.4		
906-	FOR	23	1	1.0	0.0	0.0	0.0	223.4		
907-	FOR	25	1	1.0	0.0	0.0	0.0	182.1		
908-	FOR	27	1	1.0	0.0	0.0	0.0	153.0		
909-	FOR	29	1	1.0	0.0	0.0	0.0	147.7		
910-	FOR	31	1	1.0	0.0	0.0	0.0	71.8		
911-	FOR	33	1	1.0	0.0	0.0	0.0	40.0		
912-	FOR	41	1	1.0	0.0	0.0	0.0	80.4		
913-	FOR	43	1	1.0	0.0	0.0	0.0	95.4		
914-	FOR	45	1	1.0	0.0	0.0	0.0	132.5		
915-	FOR	47	1	1.0	0.0	0.0	0.0	134.5		
916-	FOR	49	1	1.0	0.0	0.0	0.0	130.5		
917-	FOR	51	1	1.0	0.0	0.0	0.0	141.8		
918-	FOR	53	1	1.0	0.0	0.0	0.0	150.8		
919-	FOR	55	1	1.0	0.0	0.0	0.0	161.8		
920-	FOR	57	1	1.0	0.0	0.0	0.0	83.0		
921-	FOR	65	1	1.0	0.0	0.0	0.0	92.6		
922-	FOR	67	1	1.0	0.0	0.0	0.0	102.6		
923-	FOR	69	1	1.0	0.0	0.0	0.0	110.0		
924-	FOR	71	1	1.0	0.0	0.0	0.0	73.0		
925-	FOR	73	1	1.0	0.0	0.0	0.0	51.4		
926-	FOR	75	1	1.0	0.0	0.0	0.0	51.3		
927-	FOR	77	1	1.0	0.0	0.0	0.0	21.2		
928-	FOR	79	1	1.0	0.0	0.0	0.0	14.2		
929-	FOR	81	1	1.0	0.0	0.0	0.0	40.0		
930-	FOR	87	1	1.0	0.0	0.0	0.0	66.0		
931-	FOR	91	1	1.0	0.0	0.0	0.0	71.0		
932-	FOR	93	1	1.0	0.0	0.0	0.0	78.5		
933-	FOR	95	1	1.0	0.0	0.0	0.0	47.5		
934-	FOR	97	1	1.0	0.0	0.0	0.0	34.8		
935-	FOR	99	1	1.0	0.0	0.0	0.0	37.7		
936-	FOR	101	1	1.0	0.0	0.0	0.0	12.2		
937-	FOR	103	1	1.0	0.0	0.0	0.0	31.9		
938-	FOR	105	1	1.0	0.0	0.0	0.0	19.9		
939-	FOR	113	1	1.0	0.0	0.0	0.0	44.9		
940-	FOR	115	1	1.0	0.0	0.0	0.0	48.9		
941-	FOR	117	1	1.0	0.0	0.0	0.0	49.2		
942-	FOR	119	1	1.0	0.0	0.0	0.0	31.5		
943-	FOR	121	1	1.0	0.0	0.0	0.0	22.5		
944-	FOR	123	1	1.0	0.0	0.0	0.0	17.7		
945-	FOR	125	1	1.0	0.0	0.0	0.0	11.3		
946-	FOR	127	1	1.0	0.0	0.0	0.0	16.5		
947-	FOR	129	1	1.0	0.0	0.0	0.0	7.5		
948-	FOR	131	1	1.0	0.0	0.0	0.0	11.85		
949-	FOR	133	1	1.0	0.0	0.0	0.0	15.64		
950-	FOR	135	1	1.0	0.0	0.0	0.0	19.64		

B/L AL JING STATIC ANALYSIS, EXP. PROP.
SKIN CHANGES OF 10-31-73 + NEW GLL OF ELEM 209+290(11-2-78)

CARD	1	2	3	4	5	6	7	8	9	10
COUNT	1	2	3	4	5	6	7	8	9	10
951-	FORCE	1	137	1	1.0	0.0	0.0	20.51		
952-	FORCE	1	139	1	1.0	0.0	0.0	20.22		
953-	FORCE	1	141	1	1.0	0.0	0.0	13.31		
954-	FORCE	1	143	1	1.0	0.0	0.0	9.24		
955-	FORCE	1	145	1	1.0	0.0	0.0	7.78		
956-	FORCE	1	147	1	1.0	0.0	0.0	13.60		
957-	FORCE	1	149	1	1.0	0.0	0.0	11.27		
958-	FORCE	1	151	1	1.0	0.0	0.0	9.45		
959-	FORCE	1	153	1	1.0	0.0	0.0	5.86		
960-	FORCE	1	155	1	1.0	0.0	0.0	7.36		
961-	FORCE	1	157	1	1.0	0.0	0.0	7.69		
962-	FORCE	1	159	1	1.0	0.0	0.0	7.58		
963-	FORCE	1	161	1	1.0	0.0	0.0	4.99		
964-	FORCE	1	163	1	1.0	0.0	0.0	3.46		
965-	FORCE	1	165	1	1.0	0.0	0.0	2.92		
966-	FORCE	1	167	1	1.0	0.0	0.0	5.10		
967-	FORCE	1	169	1	1.0	0.0	0.0	4.23		
968-	FORCE	1	171	1	1.0	0.0	0.0	12.7		
969-	FORCE	1	172	1	1.0	0.0	0.0	11.6		
970-	FORCE	1	173	1	1.0	0.0	0.0	11.6		
971-	FORCE	1	174	1	1.0	0.0	0.0	7.30		
972-	FORCE	1	175	1	1.0	0.0	0.0	2.40		
973-	FORCE	1	176	1	1.0	0.0	0.0	2.00		
974-	FORCE	1	177	1	1.0	0.0	0.0	.60		
975-	FORCE	2	2	1	1.0	0.0	0.0	97.8		
976-	FORCE	2	3	1	1.0	0.0	0.0	147.8		
977-	FORCE	2	4	1	1.0	0.0	0.0	157.0		
978-	FORCE	2	5	1	1.0	0.0	0.0	135.7		
979-	FORCE	2	6	1	1.0	0.0	0.0	120.2		
980-	FORCE	2	7	1	1.0	0.0	0.0	114.0		
981-	FORCE	2	8	1	1.0	0.0	0.0	109.5		
982-	FORCE	2	9	1	1.0	0.0	0.0	39.7		
983-	FORCE	2	18	1	1.0	0.0	0.0	143.2		
984-	FORCE	2	20	1	1.0	0.0	0.0	193.2		
985-	FORCE	2	22	1	1.0	0.0	0.0	224.4		
986-	FORCE	2	24	1	1.0	0.0	0.0	223.4		
987-	FORCE	2	26	1	1.0	0.0	0.0	182.1		
988-	FORCE	2	28	1	1.0	0.0	0.0	153.0		
989-	FORCE	2	30	1	1.0	0.0	0.0	147.7		
990-	FORCE	2	32	1	1.0	0.0	0.0	71.8		
991-	FORCE	2	34	1	1.0	0.0	0.0	40.0		
992-	FORCE	2	42	1	1.0	0.0	0.0	80.4		
993-	FORCE	2	44	1	1.0	0.0	0.0	95.4		
994-	FORCE	2	46	1	1.0	0.0	0.0	132.5		
995-	FORCE	2	48	1	1.0	0.0	0.0	134.5		
996-	FORCE	2	50	1	1.0	0.0	0.0	130.5		
997-	FORCE	2	52	1	1.0	0.0	0.0	141.8		
998-	FORCE	2	54	1	1.0	0.0	0.0	150.8		
999-	FORCE	2	56	1	1.0	0.0	0.0	161.8		
1000-	FORCE	2	58	1	1.0	0.0	0.0	83.0		

NADC-79145-60

CARD	1	2	3	4	5	6	7	8	9	10
COUNT	1	2	3	4	5	6	7	8	9	10
1001-	FOR	65	1	1.0	0.0	0.0	92.6			
1002-	FOR	69	1	1.0	0.0	0.0	102.6			
1003-	FOR	70	1	1.0	0.0	0.0	110.0			
1004-	FOR	72	1	1.0	0.0	0.0	73.0			
1005-	FOR	74	1	1.0	0.0	0.0	51.4			
1006-	FOR	75	1	1.0	0.0	0.0	51.3			
1007-	FOR	78	1	1.0	0.0	0.0	21.2			
1008-	FOR	80	1	1.0	0.0	0.0	14.2			
1009-	FOR	82	1	1.0	0.0	0.0	40.0			
1010-	FOR	90	1	1.0	0.0	0.0	66.0			
1011-	FOR	92	1	1.0	0.0	0.0	71.0			
1012-	FOR	94	1	1.0	0.0	0.0	78.5			
1013-	FOR	95	1	1.0	0.0	0.0	47.5			
1014-	FOR	98	1	1.0	0.0	0.0	34.3			
1015-	FOR	100	1	1.0	0.0	0.0	37.7			
1016-	FOR	102	1	1.0	0.0	0.0	12.2			
1017-	FOR	104	1	1.0	0.0	0.0	31.9			
1018-	FOR	106	1	1.0	0.0	0.0	19.9			
1019-	FOR	114	1	1.0	0.0	0.0	44.9			
1020-	FOR	116	1	1.0	0.0	0.0	43.9			
1021-	FOR	118	1	1.0	0.0	0.0	49.2			
1022-	FOR	120	1	1.0	0.0	0.0	31.5			
1023-	FOR	122	1	1.0	0.0	0.0	22.5			
1024-	FOR	124	1	1.0	0.0	0.0	17.7			
1025-	FOR	126	1	1.0	0.0	0.0	11.3			
1026-	FOR	128	1	1.0	0.0	0.0	14.5			
1027-	FOR	130	1	1.0	0.0	0.0	7.5			
1028-	FOR	132	1	1.0	0.0	0.0	11.85			
1029-	FOR	134	1	1.0	0.0	0.0	15.64			
1030-	FOR	136	1	1.0	0.0	0.0	19.64			
1031-	FOR	138	1	1.0	0.0	0.0	20.51			
1032-	FOR	140	1	1.0	0.0	0.0	20.22			
1033-	FOR	142	1	1.0	0.0	0.0	13.31			
1034-	FOR	144	1	1.0	0.0	0.0	9.24			
1035-	FOR	146	1	1.0	0.0	0.0	7.78			
1036-	FOR	148	1	1.0	0.0	0.0	13.60			
1037-	FOR	150	1	1.0	0.0	0.0	11.27			
1038-	FOR	152	1	1.0	0.0	0.0	9.45			
1039-	FOR	154	1	1.0	0.0	0.0	5.86			
1040-	FOR	156	1	1.0	0.0	0.0	7.36			
1041-	FOR	158	1	1.0	0.0	0.0	7.69			
1042-	FOR	160	1	1.0	0.0	0.0	7.58			
1043-	FOR	162	1	1.0	0.0	0.0	4.99			
1044-	FOR	164	1	1.0	0.0	0.0	3.46			
1045-	FOR	166	1	1.0	0.0	0.0	2.92			
1046-	FOR	168	1	1.0	0.0	0.0	5.10			
1047-	FOR	170	1	1.0	0.0	0.0	4.23			
1048-	FOR	171	1	1.0	0.0	0.0	12.7			
1049-	FOR	172	1	1.0	0.0	0.0	11.6			
1050-	FOR	173	1	1.0	0.0	0.0	11.6			

3/AL WING STATIC ANALYSIS, EXP. PROP.
SKIN CHANGES OF 10-31-73 + NEW GIL OF ELEM 239+290(11-2-73)

CARD	1	2	3	4	5	6	7	8	9	10
CCUNT	1	2	3	4	5	6	7	8	9	10
1051-	FORCE	2	174	1	1.0	.0	.0	7.30		
1052-	FORCE	2	175	1	1.0	.0	.0	2.40		
1053-	FORCE	2	176	1	1.0	.0	.0	2.00		
1054-	FORCE	2	177	1	1.0	.0	.0	.60		
1055-	GRDSET	1								
1056-	GRID	1	11.250	14.929	.000	.000	.0	.0		
1057-	GRID	2	14.000	18.579	.000	.000	.0	.0		
1058-	GRID	3	19.000	25.214	.000	.000	.0	.0		
1059-	GRID	4	24.000	31.849	.000	.000	.0	.0		
1060-	GRID	5	29.000	38.484	.000	.000	.0	.0		
1061-	GRID	6	34.000	45.120	.000	.000	.0	.0		
1062-	GRID	7	39.000	51.755	.000	.000	.0	.0		
1063-	GRID	8	44.000	58.390	.000	.000	.0	.0		
1064-	GRID	9	49.000	65.025	.000	.000	.0	.0		
1065-	GRID	10	53.600	71.130	.000	.000	.0	.0		
1066-	GRID	11	.000	19.865	-.764	.000	.0	.0		
1067-	GRID	12	.000	19.865	.780	.000	.0	.0		
1068-	GRID	13	4.500	19.865	-.751	.000	.0	.0		
1069-	GRID	14	4.500	19.865	.766	.000	.0	.0		
1070-	GRID	15	9.000	19.490	-.710	.000	.0	.0		
1071-	GRID	16	9.000	19.490	.726	.000	.0	.0		
1072-	GRID	17	14.000	25.567	-.671	.000	.0	.0		
1073-	GRID	18	14.000	25.567	.687	.000	.0	.0		
1074-	GRID	19	19.000	31.644	-.611	.000	.0	.0		
1075-	GRID	20	19.000	31.644	.632	.000	.0	.0		
1076-	GRID	21	24.000	37.720	-.567	.000	.0	.0		
1077-	GRID	22	24.000	37.720	.583	.000	.0	.0		
1078-	GRID	23	29.000	43.797	-.523	.000	.0	.0		
1079-	GRID	24	29.000	43.797	.534	.000	.0	.0		
1080-	GRID	25	34.000	49.874	-.468	.000	.0	.0		
1081-	GRID	26	34.000	49.874	.479	.000	.0	.0		
1082-	GRID	27	39.000	55.951	-.419	.000	.0	.0		
1083-	GRID	28	39.000	55.951	.424	.000	.0	.0		
1084-	GRID	29	44.000	62.028	-.369	.000	.0	.0		
1085-	GRID	30	44.000	62.028	.369	.000	.0	.0		
1086-	GRID	31	49.000	68.104	-.310	.000	.0	.0		
1087-	GRID	32	49.000	68.104	.310	.000	.0	.0		
1088-	GRID	33	53.600	73.695	-.254	.000	.0	.0		
1089-	GRID	34	53.600	73.695	.254	.000	.0	.0		
1090-	GRID	35	.000	27.330	-.764	.000	.0	.0		
1091-	GRID	36	.000	27.330	.780	.000	.0	.0		
1092-	GRID	37	4.500	27.330	-.751	.000	.0	.0		
1093-	GRID	38	4.500	27.330	.766	.000	.0	.0		
1094-	GRID	39	9.000	27.330	-.710	.000	.0	.0		
1095-	GRID	40	9.000	27.330	.726	.000	.0	.0		
1096-	GRID	41	14.000	33.290	-.671	.000	.0	.0		
1097-	GRID	42	14.000	33.290	.687	.000	.0	.0		
1098-	GRID	43	19.000	39.749	-.611	.000	.0	.0		
1099-	GRID	44	19.000	39.749	.632	.000	.0	.0		
1100-	GRID	45	24.000	44.209	-.567	.000	.0	.0		

3/AL JING STATIC ANALYSIS. CAP. PRIN.
SAIN CHANGES OF 10-31-73 + NEW GIL OF ELEM 280+290(11-2-73)

08-28101 NADC-79145-60

SORTED BULK DATA ECHO

CARD	COUNT	1	2	3	4	5	6	7	8	9	10
1101-	GRID	45	0	24.000	44.209	.583	0	0	0	0	0
1102-	GRID	47	0	29.000	49.669	-.523	0	0	0	0	0
1103-	GRID	43	0	29.000	49.669	.534	0	0	0	0	0
1104-	GRID	49	0	34.000	55.128	-.468	0	0	0	0	0
1105-	GRID	50	0	34.000	55.128	.479	0	0	0	0	0
1106-	GRID	51	0	39.000	60.538	-.419	0	0	0	0	0
1107-	GRID	52	0	39.000	60.538	.424	0	0	0	0	0
1108-	GRID	53	0	44.000	64.048	-.369	0	0	0	0	0
1109-	GRID	54	0	44.000	64.048	.369	0	0	0	0	0
1110-	GRID	55	0	49.000	71.507	-.310	0	0	0	0	0
1111-	GRID	56	0	49.000	71.507	.310	0	0	0	0	0
1112-	GRID	57	0	53.600	76.530	-.254	0	0	0	0	0
1113-	GRID	58	0	53.600	76.530	.254	0	0	0	0	0
1114-	GRID	59	0	.000	36.110	-.764	0	0	0	0	0
1115-	GRID	60	0	.000	36.110	.780	0	0	0	0	0
1116-	GRID	61	0	4.500	36.110	-.751	0	0	0	0	0
1117-	GRID	62	0	4.500	36.110	.766	0	0	0	0	0
1118-	GRID	63	0	9.000	36.110	-.710	0	0	0	0	0
1119-	GRID	64	0	9.000	36.110	.726	0	0	0	0	0
1120-	GRID	65	0	14.000	40.957	-.671	0	0	0	0	0
1121-	GRID	66	0	14.000	40.957	.687	0	0	0	0	0
1122-	GRID	67	0	19.000	45.304	-.611	0	0	0	0	0
1123-	GRID	68	0	19.000	45.304	.632	0	0	0	0	0
1124-	GRID	69	0	24.000	50.551	-.567	0	0	0	0	0
1125-	GRID	70	0	24.000	50.551	.583	0	0	0	0	0
1126-	GRID	71	0	29.000	55.498	-.523	0	0	0	0	0
1127-	GRID	72	0	29.000	55.498	.534	0	0	0	0	0
1128-	GRID	73	0	34.000	60.345	-.468	0	0	0	0	0
1129-	GRID	74	0	34.000	60.345	.479	0	0	0	0	0
1130-	GRID	75	0	39.000	65.192	-.419	0	0	0	0	0
1131-	GRID	76	0	39.000	65.192	.424	0	0	0	0	0
1132-	GRID	77	0	44.000	70.039	-.369	0	0	0	0	0
1133-	GRID	78	0	44.000	70.039	.369	0	0	0	0	0
1134-	GRID	79	0	49.000	74.885	-.310	0	0	0	0	0
1135-	GRID	80	0	49.000	74.885	.310	0	0	0	0	0
1136-	GRID	81	0	53.600	79.345	-.254	0	0	0	0	0
1137-	GRID	82	0	53.600	79.345	.254	0	0	0	0	0
1138-	GRID	83	0	.000	44.390	-.764	0	0	0	0	0
1139-	GRID	84	0	.000	44.390	.780	0	0	0	0	0
1140-	GRID	85	0	4.500	44.390	-.751	0	0	0	0	0
1141-	GRID	86	0	4.500	44.390	.766	0	0	0	0	0
1142-	GRID	87	0	9.000	44.390	-.710	0	0	0	0	0
1143-	GRID	88	0	9.000	44.390	.726	0	0	0	0	0
1144-	GRID	89	0	14.000	49.624	-.677	0	0	0	0	0
1145-	GRID	90	0	14.000	49.624	.687	0	0	0	0	0
1146-	GRID	91	0	19.000	52.359	-.617	0	0	0	0	0
1147-	GRID	92	0	19.000	52.359	.632	0	0	0	0	0
1148-	GRID	93	0	24.000	57.073	-.567	0	0	0	0	0
1149-	GRID	94	0	24.000	57.073	.583	0	0	0	0	0
1150-	GRID	95	0	29.000	61.327	-.523	0	0	0	0	0

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DIALING STATIC ANALYSIS, EXP. PROP.
SKIN CHANGES OF 10-31-73 + NEW GIL OF ELEM 289+290(11-2-78)

CARD	COUNT	1	2	3	4	5	6	7	8	9	10
1151-	GR1D	95	0	29.000	61.327	.534	0	0	0	0	0
1152-	GR1D	97	0	34.000	65.552	-.468	0	0	0	0	0
1153-	GR1D	98	0	34.000	65.552	.479	0	0	0	0	0
1154-	GR1D	99	0	39.000	69.795	-.419	0	0	0	0	0
1155-	GR1D	100	0	39.000	69.795	.424	0	0	0	0	0
1156-	GR1D	101	0	44.000	74.030	-.369	0	0	0	0	0
1157-	GR1D	102	0	44.000	74.030	.369	0	0	0	0	0
1158-	GR1D	103	0	49.000	78.264	-.310	0	0	0	0	0
1159-	GR1D	104	0	49.000	78.264	.310	0	0	0	0	0
1160-	GR1D	105	0	53.600	82.160	-.254	0	0	0	0	0
1161-	GR1D	106	0	53.600	82.160	.254	0	0	0	0	0
1162-	GR1D	107	0	.000	50.925	-.764	0	0	0	0	0
1163-	GR1D	108	0	.000	50.925	.780	0	0	0	0	0
1164-	GR1D	109	0	4.500	50.925	-.751	0	0	0	0	0
1165-	GR1D	110	0	4.500	50.925	.766	0	0	0	0	0
1166-	GR1D	111	0	9.000	51.300	-.710	0	0	0	0	0
1167-	GR1D	112	0	9.000	51.300	.726	0	0	0	0	0
1168-	GR1D	113	0	14.000	54.007	-.677	0	0	0	0	0
1169-	GR1D	114	0	14.000	54.007	.687	0	0	0	0	0
1170-	GR1D	115	0	19.000	57.811	-.622	0	0	0	0	0
1171-	GR1D	116	0	19.000	57.811	.638	0	0	0	0	0
1172-	GR1D	117	0	24.000	61.615	-.572	0	0	0	0	0
1173-	GR1D	118	0	24.000	61.615	.588	0	0	0	0	0
1174-	GR1D	119	0	29.000	65.420	-.528	0	0	0	0	0
1175-	GR1D	120	0	29.000	65.420	.539	0	0	0	0	0
1176-	GR1D	121	0	34.000	69.224	-.479	0	0	0	0	0
1177-	GR1D	122	0	34.000	69.224	.484	0	0	0	0	0
1178-	GR1D	123	0	39.000	73.028	-.429	0	0	0	0	0
1179-	GR1D	124	0	39.000	73.028	.429	0	0	0	0	0
1180-	GR1D	125	0	44.000	76.832	-.369	0	0	0	0	0
1181-	GR1D	126	0	44.000	76.832	.369	0	0	0	0	0
1182-	GR1D	127	0	49.000	80.636	-.310	0	0	0	0	0
1183-	GR1D	128	0	49.000	80.636	.310	0	0	0	0	0
1184-	GR1D	129	0	53.600	84.136	-.254	0	0	0	0	0
1185-	GR1D	130	0	53.600	84.136	.254	0	0	0	0	0
1186-	GR1D	131	0	11.250	57.157	-.731	0	0	0	0	0
1187-	GR1D	132	0	11.250	57.157	.731	0	0	0	0	0
1188-	GR1D	133	0	15.000	59.709	-.659	0	0	0	0	0
1189-	GR1D	134	0	15.000	59.709	.643	0	0	0	0	0
1190-	GR1D	135	0	19.000	62.431	-.632	0	0	0	0	0
1191-	GR1D	136	0	19.000	62.431	.648	0	0	0	0	0
1192-	GR1D	137	0	24.000	65.834	-.588	0	0	0	0	0
1193-	GR1D	138	0	24.000	65.834	.599	0	0	0	0	0
1194-	GR1D	139	0	29.000	69.237	-.539	0	0	0	0	0
1195-	GR1D	140	0	29.000	69.237	.544	0	0	0	0	0
1196-	GR1D	141	0	34.000	72.540	-.479	0	0	0	0	0
1197-	GR1D	142	0	34.000	72.540	.484	0	0	0	0	0
1198-	GR1D	143	0	39.000	76.043	-.429	0	0	0	0	0
1199-	GR1D	144	0	39.000	76.043	.429	0	0	0	0	0
1200-	GR1D	145	0	44.000	79.446	-.369	0	0	0	0	0

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SKIN 2

CARD	COUNT	1	2	3	4	5	6	7	8	9	10
GRID	145	0	44.000	79.445	369	0	0	0	0	0	0
GRID	147	0	49.000	82.849	-310	0	0	0	0	0	0
GRID	148	0	49.000	82.349	310	0	0	0	0	0	0
GRID	149	0	53.600	85.780	-254	0	0	0	0	0	0
GRID	150	0	53.600	85.780	254	0	0	0	0	0	0
GRID	151	0	11.250	62.787	-423	0	0	0	0	0	0
GRID	152	0	11.250	62.787	423	0	0	0	0	0	0
GRID	153	0	15.000	65.015	-411	0	0	0	0	0	0
GRID	154	0	15.000	65.015	411	0	0	0	0	0	0
GRID	155	0	19.000	67.394	-388	0	0	0	0	0	0
GRID	156	0	19.000	67.394	388	0	0	0	0	0	0
GRID	157	0	24.000	70.365	-357	0	0	0	0	0	0
GRID	158	0	24.000	70.365	357	0	0	0	0	0	0
GRID	159	0	29.000	73.337	-321	0	0	0	0	0	0
GRID	160	0	29.000	73.337	321	0	0	0	0	0	0
GRID	161	0	34.000	76.309	-285	0	0	0	0	0	0
GRID	162	0	34.000	76.309	285	0	0	0	0	0	0
GRID	163	0	39.000	79.281	-249	0	0	0	0	0	0
GRID	164	0	39.000	79.281	249	0	0	0	0	0	0
GRID	165	0	44.000	82.253	-213	0	0	0	0	0	0
GRID	166	0	44.000	82.253	213	0	0	0	0	0	0
GRID	167	0	49.000	85.225	-177	0	0	0	0	0	0
GRID	168	0	49.000	85.225	177	0	0	0	0	0	0
GRID	169	0	53.600	87.760	-144	0	0	0	0	0	0
GRID	170	0	53.600	87.760	144	0	0	0	0	0	0
GRID	171	0	11.250	71.232	0.000	0	0	0	0	0	0
GRID	172	0	15.000	72.777	0.000	0	0	0	0	0	0
GRID	173	0	19.000	74.337	0.000	0	0	0	0	0	0
GRID	174	0	24.000	77.163	0.000	0	0	0	0	0	0
GRID	175	0	29.000	79.489	0.000	0	0	0	0	0	0
GRID	176	0	34.000	81.814	0.000	0	0	0	0	0	0
GRID	177	0	39.000	84.139	0.000	0	0	0	0	0	0
GRID	178	0	44.000	85.465	0.000	0	0	0	0	0	0
GRID	179	0	49.000	88.790	0.000	0	0	0	0	0	0
GRID	180	0	53.600	90.930	0.000	0	0	0	0	0	0
GRID	181	0	11.250	51.715	-0.695	0	0	0	0	0	0
GRID	182	0	11.250	51.715	0.695	0	0	0	0	0	0
GRID	183	0	1.25	1.0	2	1	0	0	0	0	0
GRID	184	0	-0.5	1.0	2	1	0	0	0	0	0
GRID	185	0	29.46	11.46	277	6.1-6	75.	0.0	6.1-6	75.	0.0
GRID	186	0	29.46	11.46	0.0	6.1-6	75.	23.993+6.46	11.064+6.095	23.993+6.46	11.064+6.095
GRID	187	0	23.996+57.793+6.46	23.996+57.793+6.46	23.993+6.46	11.064+6.095	23.993+6.46	11.064+6.095	23.993+6.46	11.064+6.095	23.993+6.46
GRID	188	0	25.779+67.203+5.46	25.779+67.203+5.46	23.001+6.46	10.076+6.095	23.001+6.46	10.076+6.095	23.001+6.46	10.076+6.095	23.001+6.46
GRID	189	0	25.968+66.803+5.46	25.968+66.803+5.46	23.143+6.46	10.217+6.095	23.143+6.46	10.217+6.095	23.143+6.46	10.217+6.095	23.143+6.46
GRID	190	0	26.544+65.945+5.46	26.544+65.945+5.46	23.250+5.46	10.323+6.095	23.250+5.46	10.323+6.095	23.250+5.46	10.323+6.095	23.250+5.46
GRID	191	0	26.762+64.308+5.46	26.762+64.308+5.46	23.001+6.46	10.076+6.095	23.001+6.46	10.076+6.095	23.001+6.46	10.076+6.095	23.001+6.46
GRID	192	0	26.671+66.301+5.46	26.671+66.301+5.46	23.100+6.46	10.175+6.095	23.100+6.46	10.175+6.095	23.100+6.46	10.175+6.095	23.100+6.46
GRID	193	0	26.000+66.200+5.46	26.000+66.200+5.46	23.133+5.46	9.468+6.095	23.133+5.46	9.468+6.095	23.133+5.46	9.468+6.095	23.133+5.46

S O R T E D B J L K D A T A E C H O									
CARD	1	2	3	4	5	6	7	8	9
COUNT	1	2	3	4	5	6	7	8	9
1251-	MAI2	154	23.596+57.7963+6-2.232+623.995+6-2.232+611.064+6.095						
1252-	MAI2	155	24.068+67.7725+6-1.714+623.972+6-1.714+611.040+6.095						
1253-	MAI2	156	24.327+67.6365+6-1.322+623.896+6-1.322+610.954+6.095						
1254-	MAI2	157	24.672+67.5715+6-1.050+623.770+6-1.050+610.839+6.095						
1255-	MAI2	158	24.971+67.4721+6-.935+623.670+6-.836+610.740+6.095						
1256-	MAI2	159	25.207+67.3735+6-.685+623.591+6-.685+610.662+6.095						
1257-	MAI2	160	25.387+67.3334+6-.747+623.530+6-.747+610.602+6.095						
1258-	MAI2	161	27.093+65.6922+6+.6	25.133+6+.6	8.950+6.095				
1259-	MAI2	210	27.562+66.6107+6+.6	22.802+6+.6	9.878+6.095				
1260-	MAI2	211	27.238+65.7124+6-.2705+622.910+6-.2705+69.986+6.095						
1261-	MAI2	212	25.968+65.8083+6-.4955+623.001+6-.4955+610.076+6.095						
1262-	MAI2	216	25.222+65.3143+6+.6	24.735+6+.6	9.582+6.095				
1263-	MAI2	260	25.423+67.3221+6-.5713+623.513+6-.5713+610.590+6.095						
1264-	MAI2	261	25.631+67.2529+6-.4351+623.449+6-.4351+610.521+6.095						
1265-	MAI2	262	25.812+67.1923+6-.4270+623.398+6-.4270+610.460+6.095						
1266-	MAI2	266	25.430+65.8627+6-.1046+625.430+6-.1046+69.131+6.095						
1267-	MAI2	239	11.67+6 6.2002+6.0	25.135+6.0	9.468+6.095				
1268-	PARAM	CJUPMASS1							
1269-	PARAM	GRDPT 63							
1270-	PARAM	AFMASS	.25880-2						
1271-	PAR 501	11	.4177-1 1.0918-2.2597-2 .1628-4 0.0	.0000	.7500	-.6959	.0000	-.6825	+PAR 501
1272-	+PAR 501								.0000+PAR 501
1273-	+PAR 501	.359127 0.							
1274-	PAR 502	11	.4177-1 1.0918-2.2597-2 .1628-4 0.0	.0000	.7500	.6959	.0000	.6825	+PAR 502
1275-	+PAR 502								.0000+PAR 502
1276-	+PAR 502	.359127 0.							
1277-	PAR 503	11	.4069-1 .9930-2 .2597-2 .1570-4 0.0	.0000	.7500	-.6825	.0000	-.6420	+PAR 503
1278-	+PAR 503								.0000+PAR 503
1279-	+PAR 503	.368648 0.							
1280-	PAR 504	11	.4069-1 .9930-2 .2597-2 .1570-4 0.0	.0000	.7500	.6825	.0000	.6420	+PAR 504
1281-	+PAR 504								.0000+PAR 504
1282-	+PAR 504	.368648 0.							
1283-	PAR 505	11	.3372-1 2.5344-24.3227-2.4465-4 0.0	.0000	1.5000	-.6420	.0000	-.6241	+PAR 505
1284-	+PAR 505								.0000+PAR 505
1285-	+PAR 505	.302448 .716663 0.							
1286-	PAR 506	11	.3372-1 2.5344-24.3227-2.4465-4 0.0	.0000	1.5000	.6420	.0000	.6241	+PAR 506
1287-	+PAR 506								.0000+PAR 506
1288-	+PAR 506	.302443 .716663 0.							
1289-	PAR 507	11	.8237-1 2.2530-24.3227-2.4393-4 0.0	.0000	1.5000	-.6241	.0000	-.5746	+PAR 507
1290-	+PAR 507								.0000+PAR 507
1291-	+PAR 507	.720386 0.							
1292-	PAR 508	11	.8237-1 2.2530-24.3227-2.4393-4 0.0	.0000	1.5000	.6241	.0000	.5746	+PAR 508
1293-	+PAR 508								.0000+PAR 508
1294-	+PAR 508	.720386 0.							
1295-	PAR 509	11	.8061-1 1.9045-24.3227-2.4299-4 0.0	.0000	1.5000	-.5745	.0000	-.5357	+PAR 509
1296-	+PAR 509								.0000+PAR 509
1297-	+PAR 509	.744353 0.							
1298-	PAR 510	11	.8061-1 1.9045-24.3227-2.4299-4 0.0	.0000	1.5000	.5746	.0000	.5357	+PAR 510
1299-	+PAR 510								.0000+PAR 510
1300-	+PAR 510	.744358 0.							

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SORTED BULK DATA ECHO

CARD	1	2	3	4	5	6	7	8	9	10
COUNT	511	11								
1301-	PAR			.7905-1	1.6252-24.3227-2.4216-4	0.0				PAR 511
1302-	PAR	511	1.5000	.0000	1.5000	-.5357	.0000	-.4968	.0000	+PAR 511
1303-	PAR	511	.251217	.759023	0.					.0000+PAR 511
1304-	PAR	512	11							
1305-	PAR	512	.5162	1.5000	.0000	1.5000	.5357	.0000	.4968	PAR 512
1306-	PAR	512	.261217	.759023	0.					.0000+PAR 512
1307-	PAR	513	11							
1308-	PAR	513	-.4720	1.5000	.0000	1.5000	-.4968	.0000	-.4473	PAR 513
1309-	PAR	513	.244321	.776383	0.					.0000+PAR 513
1310-	PAR	514	11							
1311-	PAR	514	.4720	1.5000	.0000	1.5000	.4968	.0000	.4473	PAR 514
1312-	PAR	514	.244321	.776383	0.					.0000+PAR 514
1313-	PAR	515	11							
1314-	PAR	515	-.4226	1.5000	.0000	1.5000	-.4473	.0000	-.3979	PAR 515
1315-	PAR	515	.224477	.796770	0.					.0000+PAR 515
1316-	PAR	516	11							
1317-	PAR	516	.4226	1.5000	.0000	1.5000	.4473	.0000	.3979	PAR 516
1318-	PAR	516	.224477	.796770	0.					.0000+PAR 516
1319-	PAR	517	11							
1320-	PAR	517	-.3732	1.5000	.0000	1.5000	-.3979	.0000	-.3434	PAR 517
1321-	PAR	517	.203563	.818258	0.					.0000+PAR 517
1322-	PAR	518	11							
1323-	PAR	518	.3732	1.5000	.0000	1.5000	.3979	.0000	.3484	PAR 518
1324-	PAR	518	.203563	.818258	0.					.0000+PAR 518
1325-	PAR	519	11							
1326-	PAR	519	-.3185	1.5000	.0000	1.5000	-.3794-4	0.0		PAR 519
1327-	PAR	519	.179073	.843418	0.					.0000+PAR 519
1328-	PAR	520	11							
1329-	PAR	520	.3185	1.5000	.0000	1.5000	.3484	.0000	.2885	PAR 520
1330-	PAR	520	.179073	.843418	0.					.0000+PAR 520
1331-	PAR	521	11							
1332-	PAR	521	-.2609	1.5000	.0000	1.5000	-.2335	.0000	-.2334	PAR 521
1333-	PAR	521	.151625	.871618	0.					.0000+PAR 521
1334-	PAR	522	11							
1335-	PAR	522	.2609	1.5000	.0000	1.5000	.2385	.0000	.2334	PAR 522
1336-	PAR	522	.151625	.871618	0.					.0000+PAR 522
1337-	PAR	523	11							
1338-	PAR	523	-.6392	.7500	.0000	1.5000	-.6959	.0000	-.6825	PAR 523
1339-	PAR	523	.650026	.359127	0.					.0000+PAR 523
1340-	PAR	524	11							
1341-	PAR	524	.6892	.7500	.0000	1.5000	.6959	.0000	.6825	PAR 524
1342-	PAR	524	.650026	.359127	0.					.0000+PAR 524
1343-	PAR	525	11							
1344-	PAR	525	-.6622	.7500	.0000	1.5000	-.6325	.0000	-.6420	PAR 525
1345-	PAR	525	.651013	.368648	0.					.0000+PAR 525
1346-	PAR	526	11							
1347-	PAR	526	.6622	.7500	.0000	1.5000	.6825	.0000	.6420	PAR 526
1348-	PAR	526	.651013	.368648	0.					.0000+PAR 526
1349-	PAR	527	11							
1350-	PAR	527	-.6330	.7500	.0000	1.5000	-.6420	.0000	-.6241	PAR 527
										.0000+PAR 527

D/AL WING STATIC ANALYSIS, EXP. PROJ.
SKIN CHANGES OF 10-31-78 + NEW G11 OF ELEM 289+290(11-2-78)

S O R T E D B U L K D A T A E C H O

CARD	1	2	3	4	5	6	7	8	9	10
COUNT										
1351-	P2R	527	.467863	.554310	0.					
1352-	P8R	528	11	.4059-1	1.0792-2	.3972-2	.1218-4	0.0		+PAR 528
1353-	P2R	528	.6330	.7500	.7500	.6420	.0000	.6241		.0000+P2R 528
1354-	P2R	528	.467863	.554310	0.					
1355-	P3R	529	11	.3958-1	.9534-2	.3972-2	.1187-4	0.0		+PAR 529
1356-	P2R	529	.5993	.7500	.7500	.6241	.0000	-.5746		.0000+P2R 529
1357-	P2R	529	.454276	.563453	0.					
1358-	P3R	530	11	.3958-1	.9534-2	.3972-2	.1187-4	0.0		+PAR 530
1359-	P2R	530	.5993	.7500	.7500	.6241	.0000	.5746		.0000+P2R 530
1360-	P2R	530	.454276	.568463	0.					
1361-	P3R	531	11	.3825-1	.8029-2	.3972-2	.1148-4	0.0		+PAR 531
1362-	P2R	531	.5552	.7500	.7500	.5746	.0000	-.5357		.0000+P2R 531
1363-	P2R	531	.435365	.588161	0.					
1364-	P3R	532	11	.3825-1	.8029-2	.3972-2	.1148-4	0.0		+PAR 532
1365-	P2R	532	.5552	.7500	.7500	.5746	.0000	.5357		.0000+P2R 532
1366-	P2R	532	.435365	.588161	0.					
1367-	P3R	533	11	.3709-1	.6813-2	.3972-2	.1113-4	0.0		+PAR 533
1368-	P2R	533	.5162	.7500	.7500	.5357	.0000	-.4968		.0000+P2R 533
1369-	P2R	533	.417581	.606686	0.					
1370-	P3R	534	11	.3709-1	.6813-2	.3972-2	.1113-4	0.0		+PAR 534
1371-	P2R	534	.5162	.7500	.7500	.5357	.0000	.4968		.0000+P2R 534
1372-	P2R	534	.417581	.606686	0.					
1373-	P3R	535	11	.3576-1	.5537-2	.3972-2	.1073-4	0.0		+PAR 535
1374-	P2R	535	.4720	.7500	.7500	.4968	.0000	-.4473		.0000+P2R 535
1375-	P2R	535	.335992	.629175	0.					
1376-	P3R	536	11	.3576-1	.5537-2	.3972-2	.1073-4	0.0		+PAR 536
1377-	P2R	536	.4720	.7500	.7500	.4968	.0000	.4473		.0000+P2R 536
1378-	P2R	536	.335992	.629175	0.					
1379-	P3R	537	11	.3428-1	.4366-2	.3972-2	.1028-4	0.0		+PAR 537
1380-	P2R	537	.4225	.7500	.7500	.4473	.0000	-.3979		.0000+P2R 537
1381-	P2R	537	.369858	.656398	0.					
1382-	P3R	538	11	.3428-1	.4366-2	.3972-2	.1028-4	0.0		+PAR 538
1383-	P2R	538	.4225	.7500	.7500	.4473	.0000	.3979		.0000+P2R 538
1384-	P2R	538	.369858	.656398	0.					
1385-	P3R	539	11	.3279-1	.3312-2	.3971-2	.0984-4	0.0		+PAR 539
1386-	P2R	539	.3732	.7500	.7500	.3979	.0000	-.3434		.0000+P2R 539
1387-	P2R	539	.341361	.686082	0.					
1388-	P3R	540	11	.3279-1	.3312-2	.3971-2	.0984-4	0.0		+PAR 540
1389-	P2R	540	.3732	.7500	.7500	.3979	.0000	.3484		.0000+P2R 540
1390-	P2R	540	.341361	.686082	0.					
1391-	P3R	541	11	.3115-1	.2342-2	.3971-2	.0935-4	0.0		+PAR 541
1392-	P2R	541	.3185	.7500	.7500	.3434	.0000	-.2885		.0000+P2R 541
1393-	P2R	541	.306677	.722212	0.					
1394-	P3R	542	11	.3115-1	.2342-2	.3971-2	.0935-4	0.0		+PAR 542
1395-	P2R	542	.3185	.7500	.7500	.3484	.0000	.2885		.0000+P2R 542
1396-	P2R	542	.306677	.722212	0.					
1397-	P3R	543	11	.2943-1	.1503-2	.3971-2	.0983-4	0.0		+PAR 543
1398-	P2R	543	.2609	.7500	.7500	.2935	.0000	-.2334		.0000+P2R 543
1399-	P2R	543	.256008	.764575	0.					
1400-	P3R	544	11	.2943-1	.1503-2	.3971-2	.0983-4	0.0		+PAR 544

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S O R T E O B U L K D A T A E C H O

CARD	1	2	3	4	5	6	7	8	9	10
COUNT										
1401-	PAR 544	.2609	.7500	.0000	.7500	.2895	.0000	.2334	.0000+P2R	544
1402-	P2R 544	.266008	.764575	0.	.4177-1	1.0918-2	.2597-2	.1623-4	0.0	PAR 545
1403-	P3AR 545	11	.7500	.0000	.7500	-.6959	.0000	-.6825	.0000+P2R	545
1404-	PAR 545	11	.7500	.0000	.7500	-.6959	.0000	-.6825	.0000+P2R	545
1405-	P2R 545	.650026	.359127	0.	.4177-1	1.0918-2	.2597-2	.1622-4	0.0	PAR 546
1406-	P3AR 546	11	.7500	.0000	.7500	.6959	.0000	.6825	.0000+P2R	546
1407-	PAR 546	.6892	.359127	0.	.4069-1	.9930-2	.2597-2	.1570-4	0.0	PAR 547
1408-	P2R 546	.650026	.359127	0.	.0000	.7500	-.6825	.0000	-.6420	PAR 547
1409-	P3AR 547	11	.7500	.0000	.7500	-.6825	.0000	-.6420	.0000+P2R	547
1410-	PAR 547	11	.7500	.0000	.7500	-.6825	.0000	-.6420	.0000+P2R	547
1411-	P2R 547	.631013	.368648	0.	.4069-1	.9930-2	.2597-2	.1570-4	0.0	PAR 548
1412-	P3AR 548	11	.7500	.0000	.7500	.6825	.0000	.6420	.0000+P2R	548
1413-	PAR 548	.6622	.368648	0.	.4059-1	1.0792-2	.3972-2	.1218-4	0.0	PAR 549
1414-	P2R 548	.631013	.368648	0.	.0000	.7500	-.6420	.0000	-.6241	PAR 549
1415-	P3AR 549	11	.7500	.0000	.7500	-.6420	.0000	-.6241	.0000+P2R	549
1416-	PAR 549	11	.7500	.0000	.7500	-.6420	.0000	-.6241	.0000+P2R	549
1417-	P2R 549	.657863	.554310	0.	.4059-1	1.0792-2	.3972-2	.1218-4	0.0	PAR 550
1418-	P3AR 550	11	.7500	.0000	.7500	.6420	.0000	.6241	.0000+P2R	550
1419-	PAR 550	.6330	.554310	0.	.3958-1	.9554-2	.3972-2	.1137-4	0.0	PAR 551
1420-	P2R 550	.657863	.554310	0.	.0000	.7500	-.6241	.0000	-.5746	PAR 551
1421-	P3AR 551	11	.7500	.0000	.7500	-.6241	.0000	-.5746	.0000+P2R	551
1422-	PAR 551	11	.7500	.0000	.7500	-.6241	.0000	-.5746	.0000+P2R	551
1423-	P2R 551	.634275	.568463	0.	.3956-1	.9554-2	.3972-2	.1137-4	0.0	PAR 552
1424-	P3AR 552	11	.7500	.0000	.7500	.6241	.0000	.5746	.0000+P2R	552
1425-	PAR 552	.6993	.568463	0.	.3825-1	.8029-2	.3972-2	.1143-4	0.0	PAR 553
1426-	P2R 552	.634275	.568463	0.	.0000	.7500	-.5746	.0000	-.5357	PAR 553
1427-	P3AR 553	11	.7500	.0000	.7500	.5746	.0000	.5357	.0000+P2R	553
1428-	PAR 553	11	.7500	.0000	.7500	.5746	.0000	.5357	.0000+P2R	553
1429-	P2R 553	.633655	.588161	0.	.3709-1	.6813-2	.3972-2	.1113-4	0.0	PAR 554
1430-	P3AR 554	11	.7500	.0000	.7500	.5357	.0000	.4968	.0000+P2R	554
1431-	PAR 554	.5552	.588161	0.	.3576-1	.5537-2	.3972-2	.1073-4	0.0	PAR 555
1432-	P2R 554	.633655	.588161	0.	.0000	.7500	-.4968	.0000	-.4473	PAR 555
1433-	P3AR 555	11	.7500	.0000	.7500	.4968	.0000	.4473	.0000+P2R	555
1434-	PAR 555	11	.7500	.0000	.7500	.4968	.0000	.4473	.0000+P2R	555
1435-	P2R 555	.617581	.606686	0.	.3709-1	.6813-2	.3972-2	.1113-4	0.0	PAR 556
1436-	P3AR 556	11	.7500	.0000	.7500	.4473	.0000	.4068	.0000+P2R	556
1437-	PAR 556	.5162	.606686	0.	.3576-1	.5537-2	.3972-2	.1073-4	0.0	PAR 557
1438-	P2R 556	.617581	.606686	0.	.0000	.7500	-.4068	.0000	-.3979	PAR 557
1439-	P3AR 557	11	.7500	.0000	.7500	.3979	.0000	.3979	.0000+P2R	557
1440-	PAR 557	11	.7500	.0000	.7500	.3979	.0000	.3979	.0000+P2R	557
1441-	P2R 557	.635992	.629175	0.	.3576-1	.5537-2	.3972-2	.1073-4	0.0	PAR 558
1442-	P3AR 558	11	.7500	.0000	.7500	.4968	.0000	.4473	.0000+P2R	558
1443-	PAR 558	.4720	.629175	0.	.3426-1	.4356-2	.3972-2	.1028-4	0.0	PAR 559
1444-	P2R 558	.635992	.629175	0.	.0000	.7500	-.4473	.0000	-.3979	PAR 559
1445-	P3AR 559	11	.7500	.0000	.7500	.4473	.0000	.3979	.0000+P2R	559
1446-	PAR 559	11	.7500	.0000	.7500	.4473	.0000	.3979	.0000+P2R	559
1447-	P2R 559	.635992	.629175	0.	.3428-1	.4356-2	.3972-2	.1028-4	0.0	PAR 560
1448-	P3AR 560	11	.7500	.0000	.7500	.4473	.0000	.3979	.0000+P2R	560
1449-	PAR 560	11	.7500	.0000	.7500	.4473	.0000	.3979	.0000+P2R	560
1450-	P2R 560	.635992	.629175	0.	.0000	.7500	-.3979	.0000	-.3979	PAR 560

BYAL JING STATIC ANALYSIS, EXP. PROP.
SKIN CHANGES OF 10-31-78 + NEW G11 OF ELEM 289+290(11-2-78)

S O R T E D B U L K D A T A E C H O									
CARD	1	2	3	4	5	6	7	8	9
COUNT	11	11	11	11	11	11	11	11	11
1451-	PBAR 551	11	11	11	11	11	11	11	11
1452-	+PAR 561	-3732	.7500	.3279-1	.3312-2	.3971-2	.0984-4	0.0	+PAR 561
1453-	+P2R 561	-341361	.686082	0.	.7500	-.3979	.0000	-.3484	.0000+P2R 561
1454-	PBAR 552	11	11	11	11	11	11	11	11
1455-	+PAR 562	.3732	.7500	.3279-1	.3312-2	.3971-2	.0984-4	0.0	+PAR 562
1456-	+P2R 562	-341361	.686082	0.	.7500	.3979	.0000	.3484	.0000+P2R 562
1457-	PBAR 553	11	11	11	11	11	11	11	11
1458-	+PAR 563	-3185	.7500	.3115-1	.2342-2	.3971-2	.0935-4	0.0	+PAR 563
1459-	+P2R 563	-306677	.722212	0.	.7500	-.3484	.0000	-.2385	.0000+P2R 563
1460-	PBAR 554	11	11	11	11	11	11	11	11
1461-	+PAR 564	.3185	.7500	.3115-1	.2342-2	.3971-2	.0935-4	0.0	+PAR 564
1462-	+P2R 564	-306677	.722212	0.	.7500	.3484	.0000	.2885	.0000+P2R 564
1463-	PBAR 555	11	11	11	11	11	11	11	11
1464-	+PAR 565	-.2609	.7500	.2943-1	.1508-2	.3971-2	.0883-4	0.0	+PAR 565
1465-	+P2R 565	-266008	.764575	0.	.7500	-.2885	.0000	-.2334	.0000+P2R 565
1466-	PBAR 556	11	11	11	11	11	11	11	11
1467-	+PAR 566	.2609	.7500	.2943-1	.1508-2	.3971-2	.0883-4	0.0	+PAR 566
1468-	+P2R 566	-266008	.764575	0.	.7500	.2885	.0000	.2334	.0000+P2R 566
1469-	PBAR 557	11	11	11	11	11	11	11	11
1470-	+PAR 567	-.6892	.7500	.6205-1	1.5961-2	.3745-2	.5421-4	0.0	+PAR 567
1471-	+P2R 567	-666408	.362600	0.	.7500	-.6959	.0000	-.6825	.0000+P2R 567
1472-	PBAR 558	11	11	11	11	11	11	11	11
1473-	+PAR 568	.6892	.7500	.6205-1	1.5961-2	.3745-2	.5421-4	0.0	+PAR 568
1474-	+P2R 568	-666408	.362600	0.	.7500	.6959	.0000	.6825	.0000+P2R 568
1475-	PBAR 559	11	11	11	11	11	11	11	11
1476-	+PAR 569	-.6622	.7500	.6043-1	1.4506-2	.3744-2	.5227-4	0.0	+PAR 569
1477-	+P2R 569	-657475	.372309	0.	.7500	-.6825	.0000	-.6420	.0000+P2R 569
1478-	PBAR 570	11	11	11	11	11	11	11	11
1479-	+PAR 570	.6622	.7500	.6043-1	1.4506-2	.3744-2	.5227-4	0.0	+PAR 570
1480-	+P2R 570	-657475	.372309	0.	.7500	.6825	.0000	.6420	.0000+P2R 570
1481-	PBAR 571	11	11	11	11	11	11	11	11
1482-	+PAR 571	-.6330	.7500	.4059-1	1.0792-2	.3972-2	.1218-4	0.0	+PAR 571
1483-	+P2R 571	-667863	.554310	0.	.7500	-.6420	.0000	-.6241	.0000+P2R 571
1484-	PBAR 572	11	11	11	11	11	11	11	11
1485-	+PAR 572	.6330	.7500	.4059-1	1.0792-2	.3972-2	.1218-4	0.0	+PAR 572
1486-	+P2R 572	-667863	.554310	0.	.7500	.6420	.0000	.6241	.0000+P2R 572
1487-	PBAR 573	11	11	11	11	11	11	11	11
1488-	+PAR 573	-.5993	.7500	.3958-1	.9554-2	.3972-2	.1197-4	0.0	+PAR 573
1489-	+P2R 573	-454276	.568463	0.	.7500	-.6241	.0000	-.5746	.0000+P2R 573
1490-	PBAR 574	11	11	11	11	11	11	11	11
1491-	+PAR 574	.5993	.7500	.3958-1	.9554-2	.3972-2	.1197-4	0.0	+PAR 574
1492-	+P2R 574	-454276	.568463	0.	.7500	.6241	.0000	.5746	.0000+P2R 574
1493-	PBAR 575	11	11	11	11	11	11	11	11
1494-	+PAR 575	-.5552	.7500	.3925-1	.8029-2	.3972-2	.1148-4	0.0	+PAR 575
1495-	+P2R 575	-435365	.588161	0.	.7500	-.5746	.0000	-.5357	.0000+P2R 575
1496-	PBAR 576	11	11	11	11	11	11	11	11
1497-	+PAR 576	.5552	.7500	.3825-1	.8029-2	.3972-2	.1148-4	0.0	+PAR 576
1498-	+P2R 576	-435365	.588161	0.	.7500	.5746	.0000	.5357	.0000+P2R 576
1499-	PBAR 577	11	11	11	11	11	11	11	11
1500-	+PAR 577	-.5162	.7500	.3709-1	.6819-2	.3972-2	.1113-4	0.0	+PAR 577

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SORTED BULK DATA ECHO

CARD	1	2	3	4	5	6	7	8	9	10
COUNT	1	2	3	4	5	6	7	8	9	10
1501-	+P2R 577	.417581	.606686	0.						
1502-	+P2R 578	.5162	.7500	.3709-1	.6818-2	.3972-2	.1113-4	0.0		+PAR 578
1503-	+P2R 578	.417581	.606686	0.		.5357	.0000	.4968		.0000+P2R 578
1504-	+P2R 579	.4720	.7500	.3576-1	.5537-2	.3972-2	.1073-4	0.0		+PAR 579
1505-	+P2R 579	.395992	.629175	0.		.7500	.0000	.0000		.0000+P2R 579
1506-	+P2R 580	.4720	.7500	.3576-1	.5537-2	.3972-2	.1073-4	0.0		+PAR 580
1507-	+P2R 580	.395992	.629175	0.		.7500	.0000	.4968		.0000+P2R 580
1508-	+P2R 581	.4226	.7500	.3428-1	.4366-2	.3972-2	.1028-4	0.0		+PAR 581
1509-	+P2R 581	.369859	.656398	0.		.7500	.0000	.0000		.0000+P2R 581
1510-	+P2R 582	.4226	.7500	.3428-1	.4366-2	.3972-2	.1028-4	0.0		+PAR 582
1511-	+P2R 582	.369859	.656398	0.		.7500	.0000	.4473		.0000+P2R 582
1512-	+P2R 583	.3732	.7500	.3279-1	.3312-2	.3971-2	.0984-4	0.0		+PAR 583
1513-	+P2R 583	.341361	.636082	0.		.7500	.0000	.0000		.0000+P2R 583
1514-	+P2R 584	.3732	.7500	.3279-1	.3312-2	.3971-2	.0984-4	0.0		+PAR 584
1515-	+P2R 584	.341361	.636082	0.		.7500	.0000	.3484		.0000+P2R 584
1516-	+P2R 585	.3185	.7500	.3115-1	.2342-2	.3971-2	.0935-4	0.0		+PAR 585
1517-	+P2R 585	.306677	.722212	0.		.7500	.0000	.0000		.0000+P2R 585
1518-	+P2R 586	.3185	.7500	.3115-1	.2342-2	.3971-2	.0935-4	0.0		+PAR 586
1519-	+P2R 586	.306677	.722212	0.		.7500	.0000	.2885		.0000+P2R 586
1520-	+P2R 587	.2609	.7500	.2943-1	.1508-2	.3971-2	.0893-4	0.0		+PAR 587
1521-	+P2R 587	.266008	.764575	0.		.7500	.0000	.0000		.0000+P2R 587
1522-	+P2R 588	.2609	.7500	.2943-1	.1508-2	.3971-2	.0883-4	0.0		+PAR 588
1523-	+P2R 588	.256009	.764575	0.		.7500	.0000	.2334		.0000+P2R 588
1524-	+P2R 589	.6392	.7500	.6205-1	1.5961-2	.3745-2	.5421-4	0.0		+PAR 589
1525-	+P2R 589	.656403	.362600	0.		.7500	.0000	.0000		.0000+P2R 589
1526-	+P2R 590	.6392	.7500	.6205-1	1.5961-2	.3745-2	.5421-4	0.0		+PAR 590
1527-	+P2R 590	.656403	.362600	0.		.7500	.0000	.6825		.0000+P2R 590
1528-	+P2R 591	.6622	.7500	.6043-1	1.4505-2	.3744-2	.5227-4	0.0		+PAR 591
1529-	+P2R 591	.657476	.372309	0.		.7500	.0000	.0000		.0000+P2R 591
1530-	+P2R 592	.6622	.7500	.6043-1	1.4505-2	.3744-2	.5227-4	0.0		+PAR 592
1531-	+P2R 592	.657476	.372309	0.		.7500	.0000	.5420		.0000+P2R 592
1532-	+P2R 593	.6330	.7500	.6059-1	1.0792-2	.3972-2	.1219-4	0.0		+PAR 593
1533-	+P2R 593	.467863	.554310	0.		.7500	.0000	.0000		.0000+P2R 593
1534-	+P2R 594	.4059-1	1.0792-2	.3972-2	.1219-4	0.0				+PAR 594

S O R T E D B U L K D A T A E C H O										
CARD	1	2	3	4	5	6	7	8	9	10
CCOUNT										
1551-	+PAR 594	.6330	.7500	.0000	.7500	.6420	.0000	.6241	.0000+PAR 594	
1552-	+PAR 594	.467863	.554310	0.						
1553-	+PAR 595	.11	.3974-1	.9735-2	.3972-2	.1192-4	0.0		+PAR 595	
1554-	+PAR 595	-.6046	.7500	.0000	.7500	-.6241	.0000	-.5851	.0000+PAR 595	
1555-	+PAR 595	.436439	.566210	0.						
1556-	+PAR 596	.11	.3974-1	.9735-2	.3972-2	.1192-4	0.0		+PAR 596	
1557-	+PAR 596	.6046	.7500	.0000	.7500	.6241	.0000	.5851	.0000+PAR 596	
1558-	+PAR 596	.436439	.566210	0.						
1559-	+PAR 597	.11	.3857-1	.8376-2	.3972-2	.1157-4	0.0		+PAR 597	
1560-	+PAR 597	-.5657	.7500	.0000	.7500	-.5851	.0000	-.5462	.0000+PAR 597	
1561-	+PAR 597	.439977	.583358	0.						
1562-	+PAR 598	.11	.3857-1	.8376-2	.3972-2	.1157-4	0.0		+PAR 598	
1563-	+PAR 598	.5657	.7500	.0000	.7500	.5851	.0000	.5462	.0000+PAR 598	
1564-	+PAR 598	.439977	.583358	0.						
1565-	+PAR 599	.11	.3740-1	.7133-2	.3972-2	.1122-4	0.0		+PAR 599	
1566-	+PAR 599	-.5267	.7500	.0000	.7500	-.5462	.0000	-.5073	.0000+PAR 599	
1567-	+PAR 599	.422486	.601577	0.						
1568-	+PAR 600	.11	.3740-1	.7133-2	.3972-2	.1122-4	0.0		+PAR 600	
1569-	+PAR 600	.5267	.7500	.0000	.7500	.5462	.0000	.5073	.0000+PAR 600	
1570-	+PAR 600	.422486	.601577	0.						
1571-	+PAR 601	.11	.3608-1	.5859-2	.3972-2	.1032-4	0.0		+PAR 601	
1572-	+PAR 601	-.4825	.7500	.0000	.7500	-.5073	.0000	-.4578	.0000+PAR 601	
1573-	+PAR 601	.401265	.623681	0.						
1574-	+PAR 602	.11	.3608-1	.5859-2	.3972-2	.1032-4	0.0		+PAR 602	
1575-	+PAR 602	.4325	.7500	.0000	.7500	.5073	.0000	.4578	.0000+PAR 602	
1576-	+PAR 602	.401265	.623681	0.						
1577-	+PAR 603	.11	.3459-1	.4611-2	.3972-2	.1033-4	0.0		+PAR 603	
1578-	+PAR 603	-.4331	.7500	.0000	.7500	-.4578	.0000	-.4084	.0000+PAR 603	
1579-	+PAR 603	.375596	.650421	0.						
1580-	+PAR 604	.11	.3459-1	.4611-2	.3972-2	.1033-4	0.0		+PAR 604	
1581-	+PAR 604	.4331	.7500	.0000	.7500	.4578	.0000	.4084	.0000+PAR 604	
1582-	+PAR 604	.375596	.650421	0.						
1583-	+PAR 605	.11	.3295-1	.3426-2	.3971-2	.0989-4	0.0		+PAR 605	
1584-	+PAR 605	-.3784	.7500	.0000	.7500	-.4084	.0000	-.3404	.0000+PAR 605	
1585-	+PAR 605	.344509	.682803	0.						
1586-	+PAR 606	.11	.3295-1	.3426-2	.3971-2	.0989-4	0.0		+PAR 606	
1587-	+PAR 606	.3784	.7500	.0000	.7500	.4084	.0000	.3404	.0000+PAR 606	
1588-	+PAR 606	.344509	.682803	0.						
1589-	+PAR 607	.11	.3115-1	.2342-2	.3971-2	.0935-4	0.0		+PAR 607	
1590-	+PAR 607	-.3185	.7500	.0000	.7500	-.3484	.0000	-.2885	.0000+PAR 607	
1591-	+PAR 607	.306677	.722212	0.						
1592-	+PAR 608	.11	.3115-1	.2342-2	.3971-2	.0935-4	0.0		+PAR 608	
1593-	+PAR 608	.3185	.7500	.0000	.7500	.3484	.0000	.2885	.0000+PAR 608	
1594-	+PAR 608	.306677	.722212	0.						
1595-	+PAR 609	.11	.2743-1	.1508-2	.3971-2	.0833-4	0.0		+PAR 609	
1596-	+PAR 609	-.2609	.7500	.0000	.7500	-.2885	.0000	-.2334	.0000+PAR 609	
1597-	+PAR 609	.256003	.764575	0.						
1598-	+PAR 610	.11	.2943-1	.1508-2	.3971-2	.0833-4	0.0		+PAR 610	
1599-	+PAR 610	.2609	.7500	.0000	.7500	.2885	.0000	.2334	.0000+PAR 610	
1600-	+PAR 610	.256003	.764575	0.						

S O R T E D B U L K D A T A E C H O

CARD	1	2	3	4	5	6	7	8	9	10
1601-	PAR 611	11								
1602-	PAR 611	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1603-	PAR 611	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1604-	PAR 612	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1605-	PAR 612	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1606-	PAR 612	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1607-	PAR 613	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1608-	PAR 613	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1609-	PAR 613	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1610-	PAR 614	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1611-	PAR 614	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1612-	PAR 614	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1613-	PAR 615	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1614-	PAR 615	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1615-	PAR 615	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1616-	PAR 616	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1617-	PAR 616	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1618-	PAR 617	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1619-	PAR 617	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1620-	PAR 617	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1621-	PAR 618	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1622-	PAR 618	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1623-	PAR 619	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1624-	PAR 619	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1625-	PAR 619	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1626-	PAR 620	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1627-	PAR 620	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1628-	PAR 621	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1629-	PAR 621	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1630-	PAR 622	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1631-	PAR 622	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1632-	PAR 623	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1633-	PAR 623	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1634-	PAR 624	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1635-	PAR 624	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1636-	PAR 625	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1637-	PAR 625	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1638-	PAR 626	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1639-	PAR 626	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1640-	PAR 627	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1641-	PAR 627	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1642-	PAR 627	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1643-	PAR 627	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1644-	PAR 627	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1645-	PAR 627	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1646-	PAR 627	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1647-	PAR 627	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1648-	PAR 627	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1649-	PAR 627	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
1650-	PAR 627	11	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000

3/AL AING STATIC ANALYSIS. EXP. PROP.
 SAIN CHANGES OF 10-31-73 + NEW SILL OF ELEM 2894290(11-2-78)

SORTED BULK DATA ECHO

CARD	1	2	3	4	5	6	7	8	9	10
COUNT	1	2	3	4	5	6	7	8	9	10
1701-	PAR 644	.1743	.7500	.0000	.7500	.1923	.0000	.1563	.0000+P2R	644
1702-	PAR 644	.192733	.829334	0.						
1703-	PAR 645	11	.1740-1	.0259-2	.2702-2	.0232-4	0.0			PAR 645
1704-	PAR 645	11	.1740-1	.0259-2	.2702-2	.0232-4	0.0			PAR 645
1705-	PAR 645	11	.1740-1	.0259-2	.2702-2	.0232-4	0.0			PAR 645
1706-	PAR 645	11	.1740-1	.0259-2	.2702-2	.0232-4	0.0			PAR 645
1707-	PAR 645	11	.1740-1	.0259-2	.2702-2	.0232-4	0.0			PAR 645
1708-	PAR 645	11	.1740-1	.0259-2	.2702-2	.0232-4	0.0			PAR 645
1709-	PAR 701	13	.4500-1	.0150-4	.75937	.0600-4	0.0			PAR 701
1710-	PAR 701	13	.4500-1	.0150-4	.75937	.0600-4	0.0			PAR 701
1711-	PAR 701	13	.4500-1	.0150-4	.75937	.0600-4	0.0			PAR 701
1712-	PAR 702	13	.9000-1	.0300-4	1.51875	.1200-4	0.0			PAR 702
1713-	PAR 702	13	.9000-1	.0300-4	1.51875	.1200-4	0.0			PAR 702
1714-	PAR 702	13	.9000-1	.0300-4	1.51875	.1200-4	0.0			PAR 702
1715-	PAR 703	13	.4500-1	.0150-4	.75937	.0600-4	0.0			PAR 703
1716-	PAR 703	13	.4500-1	.0150-4	.75937	.0600-4	0.0			PAR 703
1717-	PAR 703	13	.4500-1	.0150-4	.75937	.0600-4	0.0			PAR 703
1718-	PAR 704	13	1.5739-1	.2099-4	8.12214	.3394-4	0.0			PAR 704
1719-	PAR 704	13	1.5739-1	.2099-4	8.12214	.3394-4	0.0			PAR 704
1720-	PAR 704	13	1.5739-1	.2099-4	8.12214	.3394-4	0.0			PAR 704
1721-	PAR 705	13	3.1478-1	.4197-4	16.244431	.6793-4	0.0			PAR 705
1722-	PAR 705	13	3.1478-1	.4197-4	16.244431	.6793-4	0.0			PAR 705
1723-	PAR 705	13	3.1478-1	.4197-4	16.244431	.6793-4	0.0			PAR 705
1724-	PAR 706	13	3.1478-1	.4197-4	16.244431	.6793-4	0.0			PAR 706
1725-	PAR 706	13	3.1478-1	.4197-4	16.244431	.6793-4	0.0			PAR 706
1726-	PAR 706	13	3.1478-1	.4197-4	16.244431	.6793-4	0.0			PAR 706
1727-	PAR 707	13	3.1478-1	.4197-4	16.244431	.6793-4	0.0			PAR 707
1728-	PAR 707	13	3.1478-1	.4197-4	16.244431	.6793-4	0.0			PAR 707
1729-	PAR 707	13	3.1478-1	.4197-4	16.244431	.6793-4	0.0			PAR 707
1730-	PAR 708	13	3.1478-1	.4197-4	16.244431	.6793-4	0.0			PAR 708
1731-	PAR 708	13	3.1478-1	.4197-4	16.244431	.6793-4	0.0			PAR 708
1732-	PAR 709	13	3.1478-1	.4197-4	16.244431	.6793-4	0.0			PAR 709
1733-	PAR 709	13	3.1478-1	.4197-4	16.244431	.6793-4	0.0			PAR 709
1734-	PAR 709	13	3.1478-1	.4197-4	16.244431	.6793-4	0.0			PAR 709
1735-	PAR 710	13	3.1478-1	.4197-4	16.244431	.6793-4	0.0			PAR 710
1736-	PAR 710	13	3.1478-1	.4197-4	16.244431	.6793-4	0.0			PAR 710
1737-	PAR 711	13	3.1478-1	.4197-4	16.244431	.6793-4	0.0			PAR 711
1738-	PAR 711	13	3.1478-1	.4197-4	16.244431	.6793-4	0.0			PAR 711
1739-	PAR 711	13	3.1478-1	.4197-4	16.244431	.6793-4	0.0			PAR 711
1740-	PAR 712	13	3.0219-1	.4029-4	14.446391	.6117-4	0.0			PAR 712
1741-	PAR 712	13	3.0219-1	.4029-4	14.446391	.6117-4	0.0			PAR 712
1742-	PAR 712	13	3.0219-1	.4029-4	14.446391	.6117-4	0.0			PAR 712
1743-	PAR 713	13	1.4480-1	.1931-4	6.32462	.7723-4	0.0			PAR 713
1744-	PAR 713	13	1.4480-1	.1931-4	6.32462	.7723-4	0.0			PAR 713
1745-	PAR 713	13	1.4480-1	.1931-4	6.32462	.7723-4	0.0			PAR 713
1746-	PAR 714	13	.4500-1	.0150-4	.75937	.0600-4	0.0			PAR 714
1747-	PAR 714	13	.4500-1	.0150-4	.75937	.0600-4	0.0			PAR 714
1748-	PAR 714	13	.4500-1	.0150-4	.75937	.0600-4	0.0			PAR 714
1749-	PAR 714	13	.4500-1	.0150-4	.75937	.0600-4	0.0			PAR 714
1750-	PAR 714	13	.4500-1	.0150-4	.75937	.0600-4	0.0			PAR 714

NADC-79145-60

SORTED BULK DATA ECHO

CARD COUNT	1	2	3	4	5	6	7	8	9	10
1751-	PBAR 715	.0000	13	.9000-1.0300-4	1.51875	.1200-4	0.0	.0000	.0000	+PAR 715
1752-	+PAR 715	.0000	.0000	.0100	.0000	.0000	.0000	.0000	.0000	+PAR 715
1753-	+PAR 715	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	+PAR 715
1754-	PBAR 715	.0000	13	.4500-1.0150-4	.75937	.0600-4	0.0	.0000	.0000	+PAR 715
1755-	+PAR 715	.0000	.0000	.0100	.0000	.0000	.0000	.0000	.0000	+PAR 715
1756-	+PAR 715	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	+PAR 715
1757-	PBAR 717	.0000	13	1.1105-1.0833-4	5.07193	.3331-4	0.0	.0000	.0000	+PAR 717
1758-	+PAR 717	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	+PAR 717
1759-	+PAR 717	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	+PAR 717
1760-	PBAR 718	.0000	13	2.2210-1.1656-4	10.14395	.6663-4	0.0	.0000	.0000	+PAR 718
1761-	+PAR 718	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	+PAR 718
1762-	+PAR 718	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	+PAR 718
1763-	PBAR 719	.0000	13	2.2210-1.1656-4	10.14395	.6663-4	0.0	.0000	.0000	+PAR 719
1764-	+PAR 719	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	+PAR 719
1765-	+PAR 719	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	+PAR 719
1766-	PBAR 720	.0000	13	2.2210-1.1656-4	10.14395	.6663-4	0.0	.0000	.0000	+PAR 720
1767-	+PAR 720	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	+PAR 720
1768-	+PAR 720	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	+PAR 720
1769-	PBAR 721	.0000	13	2.2210-1.1656-4	10.14395	.6663-4	0.0	.0000	.0000	+PAR 721
1770-	+PAR 721	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	+PAR 721
1771-	+PAR 721	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	+PAR 721
1772-	PBAR 722	.0000	13	2.2210-1.1656-4	10.14395	.6663-4	0.0	.0000	.0000	+PAR 722
1773-	+PAR 722	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	+PAR 722
1774-	+PAR 722	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	+PAR 722
1775-	PBAR 723	.0000	13	2.2210-1.1656-4	10.14395	.6663-4	0.0	.0000	.0000	+PAR 723
1776-	+PAR 723	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	+PAR 723
1777-	+PAR 723	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	+PAR 723
1778-	PBAR 724	.0000	13	2.2210-1.1656-4	10.14395	.6663-4	0.0	.0000	.0000	+PAR 724
1779-	+PAR 724	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	+PAR 724
1780-	+PAR 724	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	+PAR 724
1781-	PBAR 725	.0000	13	2.1321-1.1509-4	9.02147	.5395-4	0.0	.0000	.0000	+PAR 725
1782-	+PAR 725	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	+PAR 725
1783-	+PAR 725	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	+PAR 725
1784-	PBAR 726	.0000	13	1.0216-1.0756-4	3.94945	.3065-4	0.0	.0000	.0000	+PAR 726
1785-	+PAR 726	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	+PAR 726
1786-	+PAR 726	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	+PAR 726
1787-	PBAR 727	.0000	13	.4500-1.0150-4	.75937	.0600-4	0.0	.0000	.0000	+PAR 727
1788-	+PAR 727	.0000	.0000	.0100	.0000	.0000	.0000	.0000	.0000	+PAR 727
1789-	+PAR 727	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	+PAR 727
1790-	PBAR 728	.0000	13	.9000-1.0300-4	1.51875	.1200-4	0.0	.0000	.0000	+PAR 728
1791-	+PAR 728	.0000	.0000	.0100	.0000	.0000	.0000	.0000	.0000	+PAR 728
1792-	+PAR 728	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	+PAR 728
1793-	PBAR 729	.0000	13	.4500-1.0150-4	.75937	.0600-4	0.0	.0000	.0000	+PAR 729
1794-	+PAR 729	.0000	.0000	.0100	.0000	.0000	.0000	.0000	.0000	+PAR 729
1795-	+PAR 729	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	+PAR 729
1796-	PBAR 730	.0000	13	1.0446-1.0793-4	4.22114	.3134-4	0.0	.0000	.0000	+PAR 730
1797-	+PAR 730	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	+PAR 730
1798-	+PAR 730	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	+PAR 730
1799-	PBAR 731	.0000	13	2.0991-1.1567-4	8.44235	.6267-4	0.0	.0000	.0000	+PAR 731
1800-	+PAR 731	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	+PAR 731

GLOBAL FIVE STATIC ANALYSIS, EXP. PART.
SKIN CHANGES OF 10-31-78 + NEW GIL OF ELEM 289+290(11-2-78)

CARD	1	2	3	4	5	6	7	8	9	10
1801-	1	...	2	...	3	...	4	...	5	...
1802-	1801-	731	.8333	1.0000	0.					
1803-	1802-	732	.8333	1.0000	0.					
1804-	1803-	733	.8333	1.0000	0.					
1805-	1804-	734	.8333	1.0000	0.					
1806-	1805-	735	.8333	1.0000	0.					
1807-	1806-	736	.8333	1.0000	0.					
1808-	1807-	737	.8333	1.0000	0.					
1809-	1808-	738	.8333	1.0000	0.					
1810-	1809-	739	.8333	1.0000	0.					
1811-	1810-	740	.8333	1.0000	0.					
1812-	1811-	741	.8333	1.0000	0.					
1813-	1812-	742	.8333	1.0000	0.					
1814-	1813-	743	.8333	1.0000	0.					
1815-	1814-	744	.8333	1.0000	0.					
1816-	1815-	745	.8333	1.0000	0.					
1817-	1816-	746	.8333	1.0000	0.					
1818-	1817-	747	.8333	1.0000	0.					
1819-	1818-	748	.8333	1.0000	0.					
1820-	1819-	749	.8333	1.0000	0.					
1821-	1820-	750	.8333	1.0000	0.					
1822-	1821-	751	.8333	1.0000	0.					
1823-	1822-	752	.8333	1.0000	0.					
1824-	1823-	753	.8333	1.0000	0.					
1825-	1824-	754	.8333	1.0000	0.					
1826-	1825-	755	.8333	1.0000	0.					
1827-	1826-	756	.8333	1.0000	0.					
1828-	1827-	757	.8333	1.0000	0.					
1829-	1828-	758	.8333	1.0000	0.					
1830-	1829-	759	.8333	1.0000	0.					
1831-	1830-	760	.8333	1.0000	0.					
1832-	1831-	761	.8333	1.0000	0.					
1833-	1832-	762	.8333	1.0000	0.					
1834-	1833-	763	.8333	1.0000	0.					
1835-	1834-	764	.8333	1.0000	0.					
1836-	1835-	765	.8333	1.0000	0.					
1837-	1836-	766	.8333	1.0000	0.					
1838-	1837-	767	.8333	1.0000	0.					
1839-	1838-	768	.8333	1.0000	0.					
1840-	1839-	769	.8333	1.0000	0.					
1841-	1840-	770	.8333	1.0000	0.					
1842-	1841-	771	.8333	1.0000	0.					
1843-	1842-	772	.8333	1.0000	0.					
1844-	1843-	773	.8333	1.0000	0.					
1845-	1844-	774	.8333	1.0000	0.					
1846-	1845-	775	.8333	1.0000	0.					
1847-	1846-	776	.8333	1.0000	0.					
1848-	1847-	777	.8333	1.0000	0.					
1849-	1848-	778	.8333	1.0000	0.					
1850-	1849-	779	.8333	1.0000	0.					

SORTED BULK DATA ECHO

CARD	1	2	3	4	5	6	7	8	9	10
COUNT	748	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	.0000
1851-	+PAR 748	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	.0000
1852-	+P2R 748	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	.0000
1853-	+PAR 749	.0000	.0000	1.9656	-1.1474	-4 7.03189	.5897	-4 0.0	.0000	.0000
1854-	+PAR 749	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	.0000
1855-	+P2R 749	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	.0000
1856-	+PAR 750	.0000	.0000	1.9656	-1.1474	-4 7.03189	.5897	-4 0.0	.0000	.0000
1857-	+PAR 750	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	.0000
1858-	+P2R 750	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	.0000
1859-	+PAR 751	.0000	.0000	1.8870	-1.1415	-4 6.25377	.5661	-4 0.0	.0000	.0000
1860-	+PAR 751	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	.0000
1861-	+P2R 751	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	.0000
1862-	+PAR 752	.0000	.0000	.9042	-1 .0678	-4 2.73780	.2713	-4 0.0	.0000	.0000
1863-	+PAR 752	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	.0000
1864-	+P2R 752	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	.0000
1865-	+PAR 753	.0000	.0000	.6750	-1 .0506	-4 1.13905	.2025	-4 0.0	.0000	.0000
1866-	+PAR 753	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	.0000
1867-	+P2R 753	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	.0000
1868-	+PAR 754	.0000	.0000	1.3500	-1.1012	-4 2.27812	.4050	-4 0.0	.0000	.0000
1869-	+PAR 754	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	.0000
1870-	+P2R 754	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	.0000
1871-	+PAR 755	.0000	.0000	.6750	-1 .0506	-4 1.13905	.2025	-4 0.0	.0000	.0000
1872-	+PAR 755	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	.0000
1873-	+P2R 755	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	.0000
1874-	+PAR 756	.0000	.0000	.9424	-1 .0707	-4 3.09982	.2827	-4 0.0	.0000	.0000
1875-	+PAR 756	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	.0000
1876-	+P2R 756	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	.0000
1877-	+PAR 757	.0000	.0000	1.8948	-1.1414	-4 6.19969	.5654	-4 0.0	.0000	.0000
1878-	+PAR 757	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	.0000
1879-	+P2R 757	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	.0000
1880-	+PAR 758	.0000	.0000	1.8843	-1.1414	-4 6.19969	.5654	-4 0.0	.0000	.0000
1881-	+PAR 758	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	.0000
1882-	+P2R 758	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	.0000
1883-	+PAR 759	.0000	.0000	1.8843	-1.1414	-4 6.19969	.5654	-4 0.0	.0000	.0000
1884-	+PAR 759	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	.0000
1885-	+P2R 759	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	.0000
1886-	+PAR 760	.0000	.0000	1.8843	-1.1414	-4 6.19969	.5654	-4 0.0	.0000	.0000
1887-	+PAR 760	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	.0000
1888-	+P2R 760	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	.0000
1889-	+PAR 761	.0000	.0000	1.8843	-1.1414	-4 6.19969	.5654	-4 0.0	.0000	.0000
1890-	+PAR 761	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	.0000
1891-	+P2R 761	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	.0000
1892-	+PAR 762	.0000	.0000	1.8843	-1.1414	-4 6.19969	.5654	-4 0.0	.0000	.0000
1893-	+PAR 762	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	.0000
1894-	+P2R 762	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	.0000
1895-	+PAR 763	.0000	.0000	1.8843	-1.1414	-4 6.19969	.5654	-4 0.0	.0000	.0000
1896-	+PAR 763	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	.0000
1897-	+P2R 763	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	.0000
1898-	+PAR 764	.0000	.0000	1.8094	-1.1357	-4 5.51365	.5423	-4 0.0	.0000	.0000
1899-	+PAR 764	.0000	.0000	.0150	.0000	.0000	.0000	.0000	.0000	.0000
1900-	+P2R 764	.8333	1.0000	0.	.0000	.0000	.0000	.0000	.0000	.0000

SORTED BULK DATA ECHO

CARD	1	2	3	4	5	6	7	8	9	10
COUNT	1	2	3	4	5	6	7	8	9	10
1901-	PBAR	765	13	.8670-1.0650-4	2.41379	.2601-4	0.0			+PAR 765
1902-	+PAR	765	.0000	.0150	.0000	.0000	.0000	.0000	.0000	+PAR 765
1903-	+PAR	765	.8333	1.0000	0.					.0000+PAR 765
1904-	PBAR	766	13	1.2096-1.1613-4	3.68732	.6431-4	0.0			+PAR 766
1905-	+PAR	766	.0000	.0200	.0000	.0000	.0000	.0000	.0000	.0000+PAR 766
1906-	+PAR	766	.8333	1.0000	0.					+PAR 766
1907-	PBAR	767	13	2.4193-1.3226-4	7.37471	1.2903-4	0.0			+PAR 767
1908-	+PAR	767	.0000	.0200	.0000	.0000	.0000	.0000	.0000	.0000+PAR 767
1909-	+PAR	767	.8333	1.0000	0.					+PAR 767
1910-	PBAR	768	13	2.4193-1.3226-4	7.37471	1.2903-4	0.0			+PAR 768
1911-	+PAR	768	.0000	.0200	.0000	.0000	.0000	.0000	.0000	.0000+PAR 768
1912-	+PAR	768	.8333	1.0000	0.					+PAR 768
1913-	PBAR	769	13	2.4193-1.3226-4	7.37471	1.2903-4	0.0			+PAR 769
1914-	+PAR	769	.0000	.0200	.0000	.0000	.0000	.0000	.0000	.0000+PAR 769
1915-	+PAR	769	.8333	1.0000	0.					+PAR 769
1916-	PBAR	770	13	2.4193-1.3226-4	7.37471	1.2903-4	0.0			+PAR 770
1917-	+PAR	770	.0000	.0200	.0000	.0000	.0000	.0000	.0000	.0000+PAR 770
1918-	+PAR	770	.8333	1.0000	0.					+PAR 770
1919-	PBAR	771	13	2.4193-1.3226-4	7.37471	1.2903-4	0.0			+PAR 771
1920-	+PAR	771	.0000	.0200	.0000	.0000	.0000	.0000	.0000	.0000+PAR 771
1921-	+PAR	771	.8333	1.0000	0.					+PAR 771
1922-	PBAR	772	13	2.4193-1.3226-4	7.37471	1.2903-4	0.0			+PAR 772
1923-	+PAR	772	.0000	.0200	.0000	.0000	.0000	.0000	.0000	.0000+PAR 772
1924-	+PAR	772	.8333	1.0000	0.					+PAR 772
1925-	PBAR	773	13	2.4193-1.3226-4	7.37471	1.2903-4	0.0			+PAR 773
1926-	+PAR	773	.0000	.0200	.0000	.0000	.0000	.0000	.0000	.0000+PAR 773
1927-	+PAR	773	.8333	1.0000	0.					+PAR 773
1928-	PBAR	774	13	2.3225-1.3097-4	6.55865	1.2387-4	0.0			+PAR 774
1929-	+PAR	774	.0000	.0200	.0000	.0000	.0000	.0000	.0000	.0000+PAR 774
1930-	+PAR	774	.8333	1.0000	0.					+PAR 774
1931-	PBAR	775	13	1.1129-1.1484-4	2.87127	.5935-4	0.0			+PAR 775
1932-	+PAR	775	.0000	.0200	.0000	.0000	.0000	.0000	.0000	.0000+PAR 775
1933-	+PAR	775	.8333	1.0000	0.					+PAR 775
1934-	PBAR	776	13	.5817-1.0194-4	1.63990	.0776-4	0.0			+PAR 776
1935-	+PAR	776	.0000	.0100	.0000	.0000	.0000	.0000	.0000	.0000+PAR 776
1936-	+PAR	776	.8333	1.0000	0.					+PAR 776
1937-	PBAR	777	13	1.1633-1.0338-4	3.27984	.1551-4	0.0			+PAR 777
1938-	+PAR	777	.0000	.0100	.0000	.0000	.0000	.0000	.0000	.0000+PAR 777
1939-	+PAR	777	.8333	1.0000	0.					+PAR 777
1940-	PBAR	778	13	1.1633-1.0338-4	3.27984	.1551-4	0.0			+PAR 778
1941-	+PAR	778	.0000	.0100	.0000	.0000	.0000	.0000	.0000	.0000+PAR 778
1942-	+PAR	778	.8333	1.0000	0.					+PAR 778
1943-	PBAR	779	13	1.1633-1.0338-4	3.27984	.1551-4	0.0			+PAR 779
1944-	+PAR	779	.0000	.0100	.0000	.0000	.0000	.0000	.0000	.0000+PAR 779
1945-	+PAR	779	.8333	1.0000	0.					+PAR 779
1946-	PBAR	780	13	1.1633-1.0338-4	3.27984	.1551-4	0.0			+PAR 780
1947-	+PAR	780	.0000	.0100	.0000	.0000	.0000	.0000	.0000	.0000+PAR 780
1948-	+PAR	780	.8333	1.0000	0.					+PAR 780
1949-	PBAR	781	13	1.1633-1.0338-4	3.27984	.1551-4	0.0			+PAR 781
1950-	+PAR	781	.0000	.0100	.0000	.0000	.0000	.0000	.0000	.0000+PAR 781

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S O R T E D B U L K D A T A E C H O

CARD	1	2	3	4	5	6	7	8	9	10
COUNT										
1951-	+P2R 781	.8333	1.0000	0.						
1952-	PBAR 782		13	1.1633-1.0338-4	3.27984	.1551-4	0.0			+PAR 782
1953-	+PAR 782	.0000	.0000	.0100	.0000	.0000	.0000	.0000	.0000	+PAR 782
1954-	+P2R 782	.8333	1.0000	0.						
1955-	PBAR 783		13	1.1633-1.0338-4	3.27984	.1551-4	0.0			+PAR 783
1956-	+PAR 783	.0000	.0000	.0100	.0000	.0000	.0000	.0000	.0000	+PAR 783
1957-	+P2R 783	.8333	1.0000	0.						
1958-	PBAR 784		13	1.1168-1.0372-4	2.91690	.1439-4	0.0			+PAR 784
1959-	+PAR 784	.0000	.0000	.0100	.0000	.0000	.0000	.0000	.0000	+PAR 784
1960-	+P2R 784	.8333	1.0000	0.						
1961-	PBAR 785		13	.5351-1.0178-4	1.27697	.0714-4	0.0			+PAR 785
1962-	+PAR 785	.0000	.0000	.0100	.0000	.0000	.0000	.0000	.0000	+PAR 785
1963-	+P2R 785	.8333	1.0000	0.						
1964-	PBAR 1101		11	.3146-1.2937-2	.3971-2	.0944-4	0.0			+PAR 1101
1965-	+PAR 1101	.3210	.7500	.0000	.7500	.0000	.0000	.0000	.0000	+PAR 1101
1966-	+P2R 1101	.308353	.720460	0.						
1967-	PBAR 1102		11	.3146-1.2937-2	.3971-2	.0944-4	0.0			+PAR 1102
1968-	+PAR 1102	.3210	.7500	.0000	.7500	.0000	.0000	.0000	.0000	+PAR 1102
1969-	+P2R 1102	.308353	.720460	0.						
1970-	PBAR 1103		11	.7960-1.2.2503-21.5454-2	.6633-4	0.0				+PAR 1103
1971-	+PAR 1103	.6420	1.0000	.0300	1.0000	.0000	.0000	.0000	.0000	+PAR 1103
1972-	+P2R 1103	.403267	.628140	0.						
1973-	PBAR 1104		11	.7960-1.2.2503-21.5454-2	.6633-4	0.0				+PAR 1104
1974-	+PAR 1104	.6420	1.0000	.0000	1.0000	.0000	.0000	.0000	.0000	+PAR 1104
1975-	+P2R 1104	.403267	.628140	0.						
1976-	PBAR 1105		11	.7960-1.2.2503-21.5454-2	.6633-4	0.0				+PAR 1105
1977-	+PAR 1105	.6420	1.0000	.0000	1.0000	.0000	.0000	.0000	.0000	+PAR 1105
1978-	+P2R 1105	.403267	.628140	0.						
1979-	PBAR 1106		11	.7960-1.2.2503-21.5454-2	.6633-4	0.0				+PAR 1106
1980-	+PAR 1106	.6420	1.0000	.0000	1.0000	.0000	.0000	.0000	.0000	+PAR 1106
1981-	+P2R 1106	.403267	.628140	0.						
1982-	PBAR 1107		11	.7960-1.2.2503-21.5454-2	.6633-4	0.0				+PAR 1107
1983-	+PAR 1107	.6420	1.0000	.0000	1.0000	.0000	.0000	.0000	.0000	+PAR 1107
1984-	+P2R 1107	.403267	.628140	0.						
1985-	PBAR 1108		11	.7960-1.2.2503-21.5454-2	.6633-4	0.0				+PAR 1108
1986-	+PAR 1108	.6420	1.0000	.0000	1.0000	.0000	.0000	.0000	.0000	+PAR 1108
1987-	+P2R 1108	.403267	.628140	0.						
1988-	PBAR 1109		11	.7960-1.2.2503-21.5454-2	.6633-4	0.0				+PAR 1109
1989-	+PAR 1109	.6420	1.0000	.0000	1.0000	.0000	.0000	.0000	.0000	+PAR 1109
1990-	+P2R 1109	.403267	.628140	0.						
1991-	PBAR 1110		11	.7960-1.2.2503-21.5454-2	.6633-4	0.0				+PAR 1110
1992-	+PAR 1110	.6420	1.0000	.0000	1.0000	.0000	.0000	.0000	.0000	+PAR 1110
1993-	+P2R 1110	.403267	.628140	0.						
1994-	PBAR 1111		11	.2785-1.8150-2	.2702-2	.0371-4	0.0			+PAR 1111
1995-	+PAR 1111	.6630	.7500	.0000	.7500	.0000	.0000	.0000	.0000	+PAR 1111
1996-	+P2R 1111	.475952	.538405	0.						
1997-	PBAR 1112		11	.2785-1.8150-2	.2702-2	.0371-4	0.0			+PAR 1112
1998-	+PAR 1112	.6630	.7500	.0000	.7500	.0000	.0000	.0000	.0000	+PAR 1112
1999-	+P2R 1112	.475952	.538405	0.						
2000-	PBAR 1113		11	.2545-1.5602-2	.2702-2	.0339-4	0.0			+PAR 1113

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S O R T E D B U L K D A T A E C H O

CARD	1	2	3	4	5	6	7	8	9	10
CDUNT	1	2	3	4	5	6	7	8	9	10
2001-	PAR1113	-5535	.7500	.0000	.7500	-.6840	.0000	-.4230	.0000	PAR2R1113
2002-	PAR1113	.431243	.584339	0.						
2003-	PAR1114	.5535	.7500	.2565-1	.5602-2	.2702-2	.0339-4	0.0		PAR1114
2004-	PAR1114	.431243	.584339	0.						PAR2R1114
2005-	PAR1115	-.2115	.7500	.1877-1	.0727-2	.2702-2	.0250-4	0.0		PAR1115
2006-	PAR1115	.224642	.796601	0.						PAR2R1115
2007-	PAR1116	.2115	.7500	.1877-1	.0727-2	.2702-2	.0250-4	0.0		PAR1116
2008-	PAR1116	.224642	.796601	0.						PAR2R1116
2009-	PAR1117	-.1167	.7500	.1693-1	.0204-2	.2702-2	.0226-4	0.0		PAR1117
2010-	PAR1117	.137812	.885809	0.						PAR2R1117
2011-	PAR1118	.1167	.7500	.1693-1	.0204-2	.2702-2	.0226-4	0.0		PAR1118
2012-	PAR1118	.137812	.885809	0.						PAR2R1118
2013-	PAR1119	-.2334	.7500	.1927-1	.0314-2	.2702-2	.0257-4	0.0		PAR1119
2014-	PAR1119	.242241	.779520	0.						PAR2R1119
2015-	PAR1120	.2334	.7500	.1927-1	.0314-2	.2702-2	.0257-4	0.0		PAR1120
2016-	PAR1120	.242241	.779520	0.						PAR2R1120
2017-	PAR1121	-.2334	.7500	.1927-1	.0314-2	.2702-2	.0257-4	0.0		PAR1121
2018-	PAR1121	.242241	.779520	0.						PAR2R1121
2019-	PAR1122	.2334	.7500	.1927-1	.0314-2	.2702-2	.0257-4	0.0		PAR1122
2020-	PAR1122	.242241	.779520	0.						PAR2R1122
2021-	PAR1123	-.2334	.7500	.1927-1	.0314-2	.2702-2	.0257-4	0.0		PAR1123
2022-	PAR1123	.242241	.779520	0.						PAR2R1123
2023-	PAR1124	.2334	.7500	.1927-1	.0314-2	.2702-2	.0257-4	0.0		PAR1124
2024-	PAR1124	.242241	.779520	0.						PAR2R1124
2025-	PAR1125	-.2334	.7500	.1927-1	.0314-2	.2702-2	.0257-4	0.0		PAR1125
2026-	PAR1125	.242241	.779520	0.						PAR2R1125
2027-	PAR1126	.2334	.7500	.1927-1	.0314-2	.2702-2	.0257-4	0.0		PAR1126
2028-	PAR1126	.242241	.779520	0.						PAR2R1126
2029-	PAR1127	-.2334	.7500	.1927-1	.0314-2	.2702-2	.0257-4	0.0		PAR1127
2030-	PAR1127	.242241	.779520	0.						PAR2R1127
2031-	PAR1128	.2334	.7500	.1927-1	.0314-2	.2702-2	.0257-4	0.0		PAR1128
2032-	PAR1128	.242241	.779520	0.						PAR2R1128
2033-	PAR1129	-.2334	.7500	.1927-1	.0314-2	.2702-2	.0257-4	0.0		PAR1129
2034-	PAR1129	.242241	.779520	0.						PAR2R1129
2035-	PAR1130	.2334	.7500	.1927-1	.0314-2	.2702-2	.0257-4	0.0		PAR1130
2036-	PAR1130	.242241	.779520	0.						PAR2R1130
2037-	PAR1131	-.2334	.7500	.1927-1	.0314-2	.2702-2	.0257-4	0.0		PAR1131
2038-	PAR1131	.242241	.779520	0.						PAR2R1131
2039-	PAR1132	.2334	.7500	.1927-1	.0314-2	.2702-2	.0257-4	0.0		PAR1132
2040-	PAR1132	.242241	.779520	0.						PAR2R1132
2041-	PAR1133	-.2334	.7500	.1927-1	.0314-2	.2702-2	.0257-4	0.0		PAR1133
2042-	PAR1133	.242241	.779520	0.						PAR2R1133
2043-	PAR1134	.2334	.7500	.1927-1	.0314-2	.2702-2	.0257-4	0.0		PAR1134
2044-	PAR1134	.242241	.779520	0.						PAR2R1134
2045-	PAR1135	-.2334	.7500	.1927-1	.0314-2	.2702-2	.0257-4	0.0		PAR1135
2046-	PAR1135	.242241	.779520	0.						PAR2R1135
2047-	PAR1136	.2334	.7500	.1927-1	.0314-2	.2702-2	.0257-4	0.0		PAR1136
2048-	PAR1136	.242241	.779520	0.						PAR2R1136
2049-	PAR1137	-.2334	.7500	.1927-1	.0314-2	.2702-2	.0257-4	0.0		PAR1137
2050-	PAR1137	.242241	.779520	0.						PAR2R1137

B/LAL JING STATIC ANALYSIS, EXP. PROP.
SKIN CHANGES OF 10-31-78 + NEW G11 OF ELEM 209+290(11-2-79)

SORTED BULK DATA ECHO

CARD	1	2	3	4	5	6	7	8	9	10
COUNT	1130	11	11	11	11	11	11	11	11	11
2051-	PBAR	1130	11	11	11	11	11	11	11	11
2052-	+PAR1130	.1783	.7500	.0000	.0000	.0000	.0000	.0000	.0000	.0000
2053-	+PAR1130	.196295	.825725	0.	0.	0.	0.	0.	0.	0.
2054-	PBAR	1131	11	11	11	11	11	11	11	11
2055-	+PAR1131	-.0615	.7500	.0000	.0000	.0000	.0000	.0000	.0000	.0000
2056-	+PAR1131	-.077829	.947436	0.	0.	0.	0.	0.	0.	0.
2057-	PBAR	1132	11	11	11	11	11	11	11	11
2058-	+PAR1132	.0616	.7500	.0000	.0000	.0000	.0000	.0000	.0000	.0000
2059-	+PAR1132	-.077829	.947436	0.	0.	0.	0.	0.	0.	0.
2060-	PBAR	1301	13	13	13	13	13	13	13	13
2061-	+PAR1301	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
2062-	+PAR1301	.6333	1.0000	0.	0.	0.	0.	0.	0.	0.
2063-	PBAR	1302	13	13	13	13	13	13	13	13
2064-	+PAR1302	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
2065-	+PAR1302	.8333	1.0000	0.	0.	0.	0.	0.	0.	0.
2066-	PBAR	1303	13	13	13	13	13	13	13	13
2067-	+PAR1303	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
2068-	+PAR1303	.8333	1.0000	0.	0.	0.	0.	0.	0.	0.
2069-	PBAR	1304	13	13	13	13	13	13	13	13
2070-	+PAR1304	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
2071-	+PAR1304	.8333	1.0000	0.	0.	0.	0.	0.	0.	0.
2072-	PBAR	1305	13	13	13	13	13	13	13	13
2073-	+PAR1305	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
2074-	+PAR1305	.8333	1.0000	0.	0.	0.	0.	0.	0.	0.
2075-	PBAR	1306	13	13	13	13	13	13	13	13
2076-	+PAR1306	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
2077-	+PAR1306	.8333	1.0000	0.	0.	0.	0.	0.	0.	0.
2078-	PBAR	1307	13	13	13	13	13	13	13	13
2079-	+PAR1307	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
2080-	+PAR1307	.8333	1.0000	0.	0.	0.	0.	0.	0.	0.
2081-	PBAR	1308	13	13	13	13	13	13	13	13
2082-	+PAR1308	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
2083-	+PAR1308	.8333	1.0000	0.	0.	0.	0.	0.	0.	0.
2084-	PBAR	1309	13	13	13	13	13	13	13	13
2085-	+PAR1309	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
2086-	+PAR1309	.8333	1.0000	0.	0.	0.	0.	0.	0.	0.
2087-	PBAR	1310	13	13	13	13	13	13	13	13
2088-	+PAR1310	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
2089-	+PAR1310	.8333	1.0000	0.	0.	0.	0.	0.	0.	0.
2090-	PBAR	1311	13	13	13	13	13	13	13	13
2091-	+PAR1311	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
2092-	+PAR1311	.8333	1.0000	0.	0.	0.	0.	0.	0.	0.
2093-	PBAR	1312	13	13	13	13	13	13	13	13
2094-	+PAR1312	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
2095-	+PAR1312	.8333	1.0000	0.	0.	0.	0.	0.	0.	0.
2096-	PBAR	1313	13	13	13	13	13	13	13	13
2097-	+PAR1313	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
2098-	+PAR1313	.8333	1.0000	0.	0.	0.	0.	0.	0.	0.
2099-	PBAR	1314	13	13	13	13	13	13	13	13
2100-	+PAR1314	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000

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DESIGN AND TEST OF A BORON - ALUMINUM HIGH TEMPERATURE WING.(U)
MAY 79 R J RICHEY, T E HESS
UNCLASSIFIED NADC-79145-60 NL

2 OF 2

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A075814



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SORTED BULK DATA ECHO

CARD	1	2	3	4	5	6	7	8	9	10
COUNT										
2101-	+P2R1314	.8333	1.0000	0.						
2102-	P3AR	1315	.3823-1	.0127-4	.11689	.0510-4	0.0			+PAR1315
2103-	+PAR1315	.0000	.0000	.0100	.0000	.0000	.0000			.0000+P2R1315
2104-	+P2R1315	.8333	1.0000	0.						
2105-	P3AR	1316	.4950-1	.0165-4	.28300	.0660-4	0.0			+PAR1316
2106-	+PAR1316	.0000	.0000	.0100	.0000	.0000	.0000			.0000+P2R1316
2107-	+P2R1316	.8333	1.0000	0.						
2108-	P3AR	2001	.11	.2	.16567-3.2333333	.66667-30.0				+PAR2001
2109-	+PAR2001	0.	0.	.05	0.	2.	.05			+P2R2001
2110-	+P2R2001	0.83333	0.83333	0.						
2111-	PQJAD1	301	113	.252	163	.13336-210	.21	.0		+Q301
2112-	+Q301	0.0	-.126							
2113-	PQJAD1	1113	113	.1365	163	.21194-310	.11375	0.0		+Q113
2114-	+Q113	0.	-.06325							
2115-	PQJAD1	1216	216	.168	266	.39514-310	.140	0.0		+Q216
2116-	+Q216	0.	-.034							
2117-	PTRIAL	145	113	.252	163	.13336-210	.21	.0		+I145
2118-	+I145	0.0	-.126							
2119-	PTRIAL	149	113	.168	163	.39514-310	.14	.0		+I149
2120-	+I149	0.0	-.084							
2121-	PTRIAL	289	295	.252	163	.13336-210	.21	.0		+I289
2122-	+I289	0.0	-.126							
2123-	PTRIAL	1011	11	.050	11	.10417-411	.043	0.0		+I011
2124-	+I011	0.	-.025							
2125-	PTRIAL	1104	104	.342	154	.61740-510	.035	0.0		+I104
2126-	+I104	0.	-.021							
2127-	PTRIAL	1105	105	.0525	155	.12059-410	.04375	0.0		+I105
2128-	+I105	0.	-.02625							
2129-	PTRIAL	1105	106	.0630	156	.20837-410	.0525	0.0		+I106
2130-	+I106	0.	-.0315							
2131-	PTRIAL	1107	107	.0735	157	.33089-410	.06125	0.0		+I107
2132-	+I107	0.	-.03675							
2133-	PTRIAL	1108	108	.6840	158	.49392-410	.070	0.0		+I108
2134-	+I108	0.	-.042							
2135-	PTRIAL	1109	109	.0945	159	.70326-410	.07975	0.0		+I109
2136-	+I109	0.	-.04725							
2137-	PTRIAL	1110	110	.1055	160	.96469-410	.0875	0.0		+I110
2138-	+I110	0.	-.0525							
2139-	PTRIAL	1113	113	.1365	163	.21194-310	.11375	0.0		+I113
2140-	+I113	0.	-.06825							
2141-	PTRIAL	1204	104	.042	154	.61740-510	.035	0.0		+I204
2142-	+I204	0.	.021							
2143-	PTRIAL	1205	105	.0525	155	.12059-410	.04375	0.0		+I205
2144-	+I205	0.	.02625							
2145-	PTRIAL	1205	106	.0630	156	.20837-410	.0525	0.0		+I206
2146-	+I206	0.	.0315							
2147-	PTRIAL	1207	107	.0735	157	.33089-410	.06125	0.0		+I207
2148-	+I207	0.	.03675							
2149-	PTRIAL	1208	108	.0840	158	.49392-410	.070	0.0		+I208
2150-	+I208	0.	.042							

SORTED BULK DATA ECHO

CARD	1	2	3	4	5	6	7	8	9	10
COUNT										
PRIAL	1209	109	.0945	159		.70326-410		.07875	0.0	+T209
+T209	0.	.04725								
PRIAL	1210	210	.105	260		.96469-410		.0875	0.0	+T210
+T210	0.	.0525								
PRIAL	1211	211	.1155	261		.12840-310		.09625	0.0	+T211
+T211	0.	.05775								
PRIAL	1212	212	.126	262		.16670-310		.105	0.0	+T212
+T212	0.	.063								
PRIAL	1215	216	.158	265		.39514-310		.140	0.0	+T216
+T216	0.	.084								
PRIAL	1513	113	.2730	163		.16955-210		.2275	0.0	+T513
+T513	0.	.1365								
SEQSP	131	112.1	182	112.2						
SPI	2	112	16	40		64	88	112		
SPI	3	16	11	12		35	36	59		
SPI	15	15	11	103				60		+UEQ0
+UEQ0	83	84	107							
SPI	30	3	16	112						
SPI	130	3	15	39		63	87	111		
SPCADD	13	2	15	3						
SPCADD	11	2	15	30						
SPCADD	12	2	15	130						
TEMPD	600	600.	75	75.						

***NO ERRORS FOUND - EXECUTE NASTRAN PROGRAM**

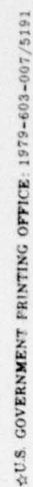
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*** SYSTEM INFORMATION MESSAGE 3107, EMGOLD IS PROCESSING SINGLE PRECISION ELEMENTS OF TYPE = 34, BEGINNING WITH ELEMENT ID = 501
*** SYSTEM INFORMATION MESSAGE 3113, EMGPRD PROCESSING SINGLE PRECISION ELEMENTS OF TYPE 10 STARTING WITH ID 1
*** SYSTEM INFORMATION MESSAGE 3113, EMGPRD PROCESSING SINGLE PRECISION ELEMENTS OF TYPE 19 STARTING WITH ID 289
*** SYSTEM INFORMATION MESSAGE 3107, EMGOLD IS PROCESSING SINGLE PRECISION ELEMENTS OF TYPE = 19, BEGINNING WITH ELEMENT ID = 289
*** SYSTEM INFORMATION MESSAGE 3113, EMGPRD PROCESSING SINGLE PRECISION ELEMENTS OF TYPE 6 STARTING WITH ID 1
*** SYSTEM INFORMATION MESSAGE 3107, EMGOLD IS PROCESSING ELEMENTS OF TYPE = 6, BEGINNING WITH ELEMENT ID = 1
METHOD 1 NT,NBR PASSES = 1,EST. TIME = 1.4
METHOD 3 T,NBR PASSES = 1,EST. TIME = .1

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